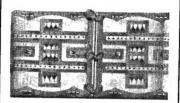


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#### DEPARTMENT OF THE INTERIOR

#### UNITED STATES GEOLOGICAL SURVEY

CHARLES D. WALCOTT, DIRECTOR

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# CATALOGUE AND INDEX

OF THE

# PUBLICATIONS

OF THE

# HAYDEN, KING, POWELL, AND WHEELER SURVEYS

#### NAMETAY

GEOLOGICAL AND GEOGRAPHICAL SURVEY OF THE TERRITORIES
GEOLOGICAL EXPLORATION OF THE FORTIETH PARALLEL \*
GEOGRAPHICAL AND GEOLOGICAL SURVEYS OF THE ROCKY MOUNTAIN REGION
GEOGRAPHICAL SURVEYS WEST OF THE ONE HUNDREDTH MERIDIAN

BY

### L. F. SCHMECKEBIER



WASHINGTON
GOVERNMENT PRINTING OFFICE
1904

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#### LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR, UNITED STATES GEOLOGICAL SURVEY, Washington, D. C., November 11, 1903.

Sir: I transmit herewith the manuscript for a "Catalogue and Index of the Publications of the Hayden, King, Powell, and Wheeler Surveys," prepared by Mr. L. F. Schmeckebier, of the editorial division of the Geological Survey, and recommend that it be published in the Bulletin series of the Survey.

The publications of these early Government organizations constitute a storehouse of geographic, geologic, ethnologic, and archæologic information concerning the western portion of the United States; and though their usefulness may have diminished as a result of more detailed surveys and more precise work, I believe that this complete catalogue and consolidated index will be welcomed by many students, investigators, and librarians.

Very respectfully,

P. C. WARMAN,

Editor.

Hon. Charles D. Walcott, Director United States Geological Survey.

### INTRODUCTION.

The field work of the four great surveys whose publications are catalogued and indexed herein was done between 1867 and 1879, when the United States Geological Survey was organized. The office work, such as the preparation of maps and reports, continued until several years later.

As far as known to the writer, no complete list of the publications of these surveys has been issued. The last edition of the catalogue of the Hayden survey was published in 1879, and the last edition of the catalogue of the Wheeler survey was issued in 1881. These catalogues are necessarily incomplete, as all the publications of these surveys had not been issued at the time the catalogues were printed.

The index is general in character, giving a bird's-eye view of the publications, and is not a compilation of details such as would be found in the indexes to the individual reports. For instance, it has been found impracticable to index generic and specific names in botany and zoology. The few specific or generic names appearing in the index are portions of the titles of papers. However, in order to give a general view of publications on zoology and botany, all entries referring to these subjects are subordinated under the headings: "Vertebrates;" "Vertebrates, fossil;" "Invertebrates; "Invertebrates, fossil;" "Plants;" and "Plants, fossil." Likewise, all entries relating to ethnologic and archæologic subjects are included in the group "Ethnology and Archæology." All geographic entries are classified under names of States and Territories.

The United States Geological Survey has no copies of these publications for distribution.

For many suggestions at various stages of the work the writer is indebted to Mr. P. C. Warman.

L. F. S.

# CATALOGUE AND INDEX OF THE PUBLICATIONS OF THE HAYDEN, KING, POWELL, AND WHEELER SURVEYS.

By L. F. Schmeckebier.

#### CATALOGUE.

UNITED STATES GEOLOGICAL AND GEOGRAPHICAL SURVEY OF THE TERRITORIES (HAYDEN).

#### ANNUAL REPORTS.

#### 1867.

[First Annual Report of the United States Geological Survey of the Territories, embracing Nebraska, by F. V. Hayden, U. S. geologist. Conducted under the authority of the Commissioner of the General Land Office. 1867.] Pages 124–177 of the Report of the Commissioner of the General Land Office for the year 1867. Washington: Government Printing Office. 1867.

[Note.—Reprinted in 1873 in "First, Second, and Third Annual Reports of the United States Geological Survey of the Territories." See page 10.]

#### 1868.

[Second Annual Report of the United States Geological Survey of the Territories, embracing Wyoming, by F. V. Hayden, U. S. geologist. Conducted under the authority of the Commissioner of the General Land Office. 1868.] Pages 220–255 of the Report of the Commissioner of the General Land Office for the year 1868. Washington: Government Printing Office. 1868.

[Note.—Reprinted in 1873 in "First, Second, and Third Annual Reports of the United States Geological Survey of the Territories." See page 10.]

Report of F. V. Hayden on the geography of the Missouri Valley, pp. 220–229. Geological explorations in Wyoming Territory [by F. V. Hayden], pp. 229–255.

#### 1869.

[Third Annual] Preliminary Field Report of the United States Geological Survey of Colorado and New Mexico, conducted under the

authority of Hon. J. D. Cox, Secretary of the Interior, by F. V. Hayden, United States geologist. Washington: Government Printing Office. 1869.

8° 155 pp.

Letter to the Secretary, pp. 3-5.

Geological report, by F. V. Hayden, pp. 7-99.

Mines and minerals of Colorado [and New Mexico], by Persifor Frazer, jr., pp. 101-130.

Agriculture of Colorado, by Cyrus Thomas, pp. 131-155.

[Note.—Reprinted in 1873 in First, Second, and Third Annual Reports of the Geological Survey of the Territories (see next entry).]

First, Second, and Third Annual Reports of the United States Geological Survey of the Territories for the years 1867, 1868, and 1869, under the Department of the Interior. Washington: Government Printing Office. 1873.

8°. 261 pp., 1 l.

Prefatory note, by F. V. Hayden, p. 3.

First Annual Report of the United States Geological Survey of the Territories, embracing Nebraska, by F. V. Hayden, U. S. geologist. Conducted under the authority of the Commissioner of the General Land Office. 1867. pp. 5-64.

[Note.—Reprinted from the "Report of the Commissioner of the General Land Office for the year 1867," pp. 124-177.]

Second Annual Report of the United States Geological Survey of the Territories. embracing Wyoming, by F. V. Hayden, U. S. geologist. Conducted under the authority of the Commissioner of the General Land Office. 1868. pp. 65–102.

[Note.—Reprinted from the "Report of the Commissioner of the General Land Office for the year 1868," pp. 220–255.]

Report of F. V. Hayden on the geography of the Missouri Valley, pp. 67-76. Geological explorations in Wyoming Territory [by F. V. Hayden], pp. 76-102.

Third Annual Report of the United States Geological Survey of the Territories, embracing Colorado and New Mexico. Conducted under the authority of the Secretary of the Interior, by F. V. Hayden, U. S. geologist. pp. 103–251.

 $[\hbox{\tt Note}, -\hbox{\tt Reprint of ``Preliminary Field Report of the United States Geological Survey of Colorado and New Mexico."]$ 

Letter to the Secretary, pp. 105-107.

Geological report, by F. V. Hayden, pp. 109-199.

Mines and minerals of Colorado [and New Mexico], by Persifor Frazer, jr., pp. 201–228.

Agriculture of Colorado, by Cyrus Thomas, pp. 229-251.

Index, pp. 253-261.

Table of contents.

#### 1870.

[Fourth Annual] Preliminary Report of the United States Geological Survey of Wyoming and portions of contiguous Territories (being a second annual report of progress), conducted under the authority of the Secretary of the Interior, by F. V. Hayden, United States geologist. Washington: Government Printing Office. 1871.

[Note.—Though called in the title a Second Annual Report, this is really the Fourth Annual Report, as the informal reports for 1867 and 1868 were considered the first and second of the series. There is another edition of this report, exactly identical, but with the date 1872.]

8°. 511 pp.

Letter to the Secretary, pp. 3-8.

Part I. Report of F. V. Hayden, pp. 9-81.

Part II. Geology of the Missouri Valley [by F. V. Hayden], pp. 83-188.

Part III. Report of Professor Cyrus Thomas, pp. 189-284.

Agriculture [in Wyoming and adjacent territory], pp. 189-264.

List and description of new species of Orthoptera, by Prof. Cyrus Thomas, pp. 265–284.

Part IV. Special reports, pp. 285-458.

- I. Preliminary paleontological report, consisting of lists of fossils, with descriptions of some new types, etc., by F. B. Meek, pp. 287–318.
- II. On the Tertiary coals of the West, by Jas. T. Hodge, geologist, pp. 318–329.
- III. The ancient lakes of western America: Their deposits and drainage, by J. S. Newberry, L.L. D., pp. 329–339.
- IV. Report on the vertebrate fossils of the Tertiary formations of the West, by Prof. Joseph Leidy, pp. 340-370.
  - V. On the fossil plants of the Cretaceous and Tertiary formations of Kansas and Nebraska, by L. Lesquereux, pp. 370–385.
- VI. On the fossil reptiles and fishes of the Cretaceous rocks of Kansas, by Prof. E. D. Cope, pp. 385–424.
- VII. On the fishes of the Tertiary shales of Green River, Wyoming Territory, by Professor Edward D. Cope, pp. 425–432.
- VIII. Recent reptiles and fishes. Report on the reptiles and fishes obtained by the naturalists of the expedition, by E. D. Cope, A. M., pp. 432-442.
  - IX. Material resources. Report on the industrial resources of western Kansas and eastern Colorado, by R. S. Elliott, pp. 442–458.

Part V. Catalogues, pp. 459-487.

- I. Mammals and birds. A list of mammals and birds collected in Wyoming Territory, by Mr. H. D. Smith and Mr. James Stevenson, during the expedition of 1870, by James Stevenson, pp. 461–467.
- II. Report on Mollusca, by S. R. Roberts, recorder conchological section, Academy Natural Sciences, Philadelphia, pp. 467–469.
- III. Coleoptera. A list of Coleoptera collected by C. Thomas, in eastern Colorado and northeastern New Mexico, during the survey of 1869, by Dr. G. H. Horn, pp. 469–470.
- IV. Hemiptera. A list of Hemiptera collected in eastern Colorado and north-eastern New Mexico, by C. Thomas, during the expedition of 1869, by P. R. Uhler, Esq., pp. 471–472.
- V. Catalogue of plants, by Thomas C. Porter, Lafayette College, Easton, Pennsylvania, pp. 472–483.
- VI. Catalogue of plants. A list of plants collected by C. Thomas, in eastern Colorado and northeastern New Mexico, during the survey of 1869, by Dr. C. C. Parry, pp. 484-487.

Appendix. Meteorology, etc., by Mr. J. W. Beaman, pp. 488–501. Index, pp. 503–511.

#### 1871.

[Fifth Annual] Preliminary Report of the United States Geological Survey of Montana and portions of adjacent Territories; being a fifth annual report of progress. By F. V. Hayden, United States geologist. Conducted under authority of the Secretary of the Interior. Washington: Government Printing Office. 1872.

 $[\mathtt{Nore}.\mathtt{--This}\ \mathtt{volume}\ \mathtt{was}\ \mathtt{also}\ \mathtt{issued}\ \mathtt{in}\ \mathtt{quarto}, \mathtt{only}\ \mathtt{30}\ \mathtt{copies}\ \mathtt{being}\ \mathtt{printed}.$  The only annual issued in quarto.]

8°. vi, 3-538 pp., 2 l., 5 maps, 2 pls.

Letter to the Secretary, pp. 3-9.

Part I. Report of F. V. Hayden, pp. 11-204, 5 maps.

Part II. Agricultural resources of the Territories, by Professor Cyrus Thomas, pp. 205–279.

[Irrigation methods in Santa Clara Valley, California.] Letter of Professor G. N. Allen, pp. 269–271.

Short descriptions of some of the valleys of Nevada, by Mr. Haskell, of Reno, Nevada, pp. 271–273.

Experiments in cultivation on the plains along the line of the Kansas Pacific Railway, by R. S. Elliott, pp. 274–279.

Part III. Paleontology, pp. 281-377.

Fossil flora, by Leo Lesquereux, pp. 283.

- I. Enumeration and description of the fossil plants from the specimens obtained in the explorations of Dr. F. V. Hayden, 1870 and 1871, pp. 283-303.
- II. Remarks on the Cretaceous species described above, pp. 303-304.

III. Tertiary flora of North America, pp. 304-318.

On the geology and paleontology of the Cretaceous strata of Kansas, by Edward D. Cope, A. M., pp. 318–349.

On the vertebrate fossils of the Wahsatch strata, by Edward D. Cope, A. M., pp. 350–353.

On the fossil vertebrates of the early Tertiary formation of Wyoming, by Prof. Joseph Leidy, pp. 353-372.

Preliminary list of the fossils collected by Dr. Hayden's exploring expedition of 1871, in Utah and Wyoming Territories, with descriptions of a few new species, by F. B. Meek, pp. 373–377.

Part IV. Zoology and botany, pp. 379-498.

Notice of some worms collected during Professor Hayden's expedition to the Yellowstone River in the summer of 1871, by Prof. Joseph Leidy, of Philadelphia, pp. 381–382.

Coleoptera, by George H. Horn, M. D., Philadelphia, pp. 382-392.

Notices of the Hemiptera of the western Territories of the United States, chiefly from the surveys of Dr. F. V. Hayden, by P. R. Uhler, pp. 392-423.

Notes on the saltatorial Orthoptera of the Rocky Mountain regions, by Professor Cyrus Thomas, pp. 423-466, pls. i-ii.

List of species of butterflies collected by Campbell Carrington and William B. Logan, of the expedition, in 1871, by W. H. Edwards, pp. 466-467.

Report on the Recent reptiles and fishes of the survey, collected by Campbell Carrington and C. M. Dawes, by Edward D. Cope, A. M., pp. 467–476.

Catalogue of plants, by Prof. Thomas C. Porter, pp. 477–498.

Part V. Meteorology, by J. W. Beaman, pp. 499-524.

Index, pp. 525-538.

Supplement to the Fifth Annual Report of the United States Geological Survey of the Territories for 1871. F. V. Hayden, United States geologist in charge. Report on fossil flora. By Leo Lesquereux. Conducted under authority of the Secretary of the Interior. Washington: Government Printing Office. 1872.

8°. 22 pp.

An enumeration with descriptions of some Tertiary fossil plants, from specimens procured in the explorations of Dr. F. V. Hayden, in 1870, by Leo Lesquereux, pp. 5–22.

#### 1872.

Sixth Annual Report of the United States Geological Survey of the Territories, embracing portions of Montana, Idaho, Wyoming, and Utah, being a report of progress of the explorations for the year 1872. By F. V. Hayden, United States geologist. Conducted under the authority of the Secretary of the Interior. Washington: Government Printing Office. 1873.

8° xi, 844 pp., 12 pls., 5 maps, 4 leaves containing figs. 10, 14, 15, 34. Letter to the Secretary, 1-10 pp.

Part I. 11-313 pp., 5 maps, 4 leaves containing figs. 10, 14, 15. 34.

Report of F. V. Hayden [on explorations in Yellowstone Valley and adjacent region], pp. 11-85, 3 maps, 3 leaves containing figs. 10, 14, 15.

Report of N. P. Langford on the resources of Snake River Valley, pp. 86–91. Means of access to the Yellowstone National Park by railroad, by R. Hering,

pp. 92–95.
Report of A. C. Peale, M. D., [on explorations in Colorado, Utah, and Wyoming], pp. 97–187, 1 leaf containing fig. 34.

Report of Frank H. Bradley, geologist of the Snake River division, pp. 189-271, 2 maps.

Physical geography and agricultural resources of Minnesota, Dakota, and Nebraska, by Cyrus Thomas, Ph. D., pp. 273–313.

Part II. Special reports on geology and paleontology, pp. 315-658, pls. 1-12. Lignitic formation and fossil flora, by Leo Lesquereux, pp. 317-427.

Preliminary paleontological report, consisting of lists and descriptions of fossils, with remarks on the ages of the rocks in which they were found,

etc., by F. B. Meek, paleontologist, pp. 429-518. Report of a geological reconnaissance along the Union Pacific Railroad, by H. M. Bannister, M. D., pp. 519-541.

On the extinct vertebrata of the Eocene of Wyoming, observed by the expedition of 1872, with notes on the geology, by Edward D. Cope, A. M., pp. 543-649, pls. 1-6.

On remains of primitive art in the Bridger Basin of southern Wyoming, by Professor Joseph Leidy, pp. 651-654, pls. 7-12.

Ancient mounds of Dakota, by C. Thomas, Ph. D., pp. 655-658.

Part III. Special reports on zoology and botany, pp. 659-792.

Report on the mammals and birds of the expedition, by C. H. Merriam, pp. 661-715.

Coleoptera, by George H. Horn, M. D., Philadelphia, p. 717.

Notes on Orthoptera, by Cyrus Thomas, Ph. D., pp. 719-725.

Odonata from the Yellowstone, by Dr. H. Hagen, pp. 727-729.

Descriptions of new species of Mallophaga collected by C. H. Merriam while in the Government geological survey of the Rocky Mountains, Professor F. V. Hayden, United States geologist, by A. S. Packard, jr., M. D., pp. 731–734.

Description of new parasitic worms found in the brain and other parts of birds, by A. S. Packard, jr., M. D., pp. 735–737.

Description of new insects, by A. S. Packard, jr., M. D., pp. 739-741.

Insects inhabiting Great Salt Lake and other saline or alkaline lakes in the West, by A. S. Packard, jr., M. D., pp. 744-746.

Botany, by John M. Coulter, pp. 747-792.

Part IV. Report on astronomy and hypsometry, pp. 793-817.

Report on astronomy and hypsometry, by Henry Gannett, M. E., pp. 795–807. Notes on the climate of Montana, by Mr. Granville Stuart, of Deer Lodge, Montana Territory, pp. 809–817.

Index, pp. 819-844.

#### 1873.

[Seventh] Annual Report of the United States Geological and Geographical Survey of the Territories, embracing Colorado, being a report of progress of the exploration for the year 1873, by F. V. Hayden, United States geologist. Conducted under the authority of the Secretary of the Interior. Washington: Government Printing Office. 1874.

 $8^{\circ}$   $\,$  xii, 718 pp., 54 pls. and maps, 44 leaves containing figures and other illustrations.

Letter to the Secretary, pp. 1-14.

Part I. Geology, mineralogy, and mining industry, pp. 15-361.

Report of F. V. Hayden, United States geologist, [on geology of central portion of Colorado], pp. 17-82, figs. 1-18, sections i-iv.

Report of Arch. R. Marvine, assistant geologist directing the Middle Park division, pp. 83-192, pls. i-iii, figs. 1-17 (fig. 4 misnamed pl. 4; fig. 6 misnamed fig. 4; fig. 17 misnamed fig. 16).

Report of A. C. Peale, M. D., geologist of the South Park division, pp. 193-273, pls. 1-20.

Report of F. M. Endlich, S. N. D. [geologist of the San Luis division], pp. 275–361, pls. A, B, viii, x, xii-xv, figs. 1-13; illustrations A and B, and 3 not numbered.

Part II. Special reports on paleontology, pp. 365-533, pls. i-viii.

The Lignitic formation and its fossil flora, by Leo Lesquereux, pp. 365–425. Report on the vertebrate paleontology of Colorado, by Edward D. Cope, A. M., pp. 427–533, pls. 1–8.

Part III. Zoology, pp. 535-623, pls. i-vi.

Report of Lieut. W. L. Carpenter on the collections made by him in 1873, while connected with the United States Geological Survey, pp. 537-538.

Destruction of pine-timber in the Rocky Mountains, by Lieut. W. L. Carpenter, U. S. A., pp. 538-539.

Report on the alpine insect-fauna of Colorado, by Lieut. W. L. Carpenter, U. S. A., pp. 539-542.

List of species of butterflies collected by Lieut. W. L. Carpenter, U. S. A., for the United States geological survey of Colorado, 1873, by W. H. Edwards, p. 542.

On the geographical distribution of the moths of Colorado, by A. S. Packard, ir., M. D., pp. 543-560.

Report on the Diptera collected by Lieut. W. L. Carpenter in Colorado during the summer of 1873, by C. R. Osten Sacken, pp. 561–566.

Notice on the galls collected by Lieut. W. L. Carpenter, by C. R. Osten Sacken, p. 567.

List of species of Coleoptera, collected by Lieut. W. L. Carpenter, United States Army, for the United States geological survey of Colorado, 1873, pp. 567-571.

Report on the Pseudo-Neuroptera and Neuroptera collected by Lieut. W. L. Carpenter in 1873 in Colorado, by Dr. H. A. Hagen, pp. 571–606.

Report on the myriopods collected by Lieut. W. L. Carpenter, in 1873, in Colorado, by A. S. Packard, ir., M. D., p. 607.

Report on the amphipod Crustaceans, by S. I. Smith, pp. 608-611, pls. i-ii. Description of a lermean Crustacean (Achthernes carpenteri) obtained by Lieut. W. L. Carpenter, in 1873, in Colorado, by A. S. Packard, jr., M. D., p. 612.

Synopsis of the fresh-water phyllopod Crustacea of North America, by A. S. Packard, jr., M. D., pp. 613-622, pls. i-iv.

List of leeches collected by Hayden's expedition, 1873, by A. E. Verrill, p. 623.

List of terrestrial mollusks collected by Lieut. W. L. Carpenter, U. S. A., for the United States geological survey of Colorado, 1873, by William G. Binney, p. 623.

Part IV. Geography and topography, pp. 625-681, 3 maps.

Sketch of the methods of survey in the geographical department, by James T. Gardner, geographer, pp. 627-628, 1 map.

The elevations of certain datum-points on the Great Lakes and rivers and in the Rocky Mountains, by James T. Gardner, geographer, pp. 629-659, 1 map.

Topographical report of Middle Park division, 1873, by S. B. Ladd, M. E., pp. 661-669.

Geographical report of Henry Gannett, M. E., [on central Colorado], pp. 670-681, 1 map.

Appendix, pp. 683-691, 1 map.

Gold Hill mining region, its position and general geology, by Arch. R. Marvine, pp. 685–687, 1 map.

The telluride ores of the Red Cloud and Cold Spring mines, Gold Hill, by B. Silliman, pp. 689–691.

Index, pp. 693-718.

#### 1874.

[Eighth] Annual Report of the United States Geological and Geographical Survey of the Territories, embracing Colorado and parts of adjacent Territories; being a report of progress of the exploration for the year 1874. By F. V. Hayden, United States geologist. Conducted under the authority of the Secretary of the Interior. Washington: Government Printing Office. 1876.

8°. ix, 515 pp. 82 leaves containing illustrations, 8 leaves containing plate descriptions.

Letter to the Secretary, pp. 1-17.

[Geology, mineralogy and mining industry], pp. 19-269.

[Report of F. V. Hayden on Lignitic group, geology of eastern base of Front Range, and geography and geology of Elk Mountains], pp. 19-71; 34 leaves.

Report on the geology of the northwestern portion of the Elk Range, by W. H. Holmes, pp. 59-71, 12 leaves containing illustrations.

Report of A. C. Peale, M. D., geologist of Middle division, pp. 73-180, 20 leaves containing illustrations.

Report of F. M. Endlich, S. N. D., 1874 [geologist of San Juan division], pp. 181–240, figs. 1–3, sections i–viii.

Report of Samuel Aughey, Ph. D., The superficial deposits of Nebraska, pp. 241-269.

Paleontology. Report of Leo Lesquereux, pp. 271-365.

On the Tertiary flora of the North American lignitic, considered as evidence of the age of the formation, pp. 275–315.

A review of the Cretaceous flora of North America, pp. 316-365, pls. i-viii. [Archæology], pp. 367-381.

Report of W. H. Jackson on ancient ruins in southwestern Colorado, pp. 367–381, pls. i-viii.

Zoology. Report of Ernest Ingersoll on the natural history of the United States Geological and Geographical Survey of the Territories, 1874, pp. 383–410.

Topography and geography. Reports of Henry Gannett, S. B. Ladd, and A. D. Wilson, pp. 411–496, 1 map.

Geographical report of Henry Gannett, M. E., topographer directing Middle division, pp. 413-433, 1 map.

Topographical report of Northern division, 1874; by Story B. Ladd, M. E., pp. 435-442.

Means of communication between Denver and San Juan mines, by A. D. Wilson, topographer directing, pp. 443–449.

Report on the topography of the San Juan country, by Franklin Rhoda, assistant topographer, pp. 451-496.

Index, pp. 497-515.

#### 1875.

✓ Ninth Annual Report of the United States Geological and Geographical Survey of the Territories, embracing Colorado and parts of adjacent Territories; being a report of progress of the exploration for the year 1875. By F. V. Hayden, United States geologist. Conducted under the authority of the Secretary of the Interior. Washington: Government Printing Office. 1877.

8°. vii, 827 pp., 10 ll. unpaged, 75 pls. and maps.

Report of F. V. Hayden, United States geologist in charge. Letter to the Secretary. pp. 1–28.

Part I. Geology, pp. 29-294, pls. i-xxii, xxiv, xxvi-xlix.

Report of A. C. Peale, M. D., geologist of the Grand River division, 1875, on the Grand River district, pp. 31-101, pls. i-viii.

Report of F. M. Endlich, S. N. D., geologist of the Southeastern division, 1875, on the Southeastern district, pp. 103–235, pls. ix–xxii, xxiv, xxvi–xxxiii.

Report of William H. Holmes, geologist of the San Juan division, 1875, on the San Juan district, pp. 237–276, pls. xxxiv-xlix.

Geological report of B. F. Mudge. Notes on the Tertiary and Cretaceous periods of Kansas, pp. 277–294.

Part II. Geography and topography. pp. 295-440, pls. l-lxi, 2 maps.

Report of A. D. Wilson, topographer of the Southeastern division, 1875, on the Southeastern district, pp. 297–333.

Topographical report on the Southeastern district, by Franklin Rhoda, assistant topographer, pp. 302–333, pl. l.

Report of Henry Gannett, M. E., topographer of the Grand River division, 1875, on the Grand River district, pp. 335-350, pls. li-lii.

Report of George B. Chittenden, topographer of the San Juan division, 1875, on the San Juan district, pp. 351-368, pls. liii-lyi.

Report of Gustavus R. Bechler, topographer, 1873, '74, '75, on the Middle and South Parks, Colorado, and adjacent country, pp. 369-440, pls. lviilxi, 2 maps.

Part III. Zoology, pp. 441-815, pls. lxii-lxx, 5 maps.

History of the American bison, Bison americanus, by J. A. Allen, pp. 443-587, 1 l. errata.

Report on the Rocky Mountain locust and other insects now injuring or likely to injure field and garden crops in the western States and Territories, by A. S. Packard, jr., M. D., pp. 589-809, 9 unpaged leaves, pls. lxii-lxx.

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List of Coleoptera collected in 1875, in Colorado and Utah, by A. S. Packard, jr., M. D., pp. 811–815.

Index, pp. 817-827.

#### 1876.

Tenth Annual Report of the United States Geological and Geograpical Survey of the Territories, embracing Colorado and parts of adjacent Territories, being a report of progress of the exploration for the year 1876. By F. V. Hayden, United States geologist. Conducted under the authority of the Secretary of the Interior. Washington: Government Printing Office. 1878.

8°. xxix, 546 pp., 79 pls., 3 maps.

Letter to the Secretary, pp. xiii-xxix.

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Art. XXXII. Description of Cambarus couesi, a new species of crawfish from Dakota, by Thos. H. Streets, M. D., U. S. N., pp. 803-804

Art. XXXIII. On a carnivorous dinosaurian from the Dakota beds of Colorado, by E. D. Cope, pp. 805–806.

Art. XXXIV. A contribution to the knowledge of the ichthyological fauna of the Green River shales, by E. D. Cope, pp. 807-819.

Art. XXXV. On the genus Erisichte, by E. D. Cope, pp. 821–823. Index. 825–856 pp.

Department of the Interior. Bulletin of the United States Geological and Geographical Survey of the Territories. F. V. Hayden, U. S. geologist-in-charge. 1878. Volume IV. Washington: Government Printing Office. 1878.

8° vii, 908 pp., 8 ll., 1 pl.

No. 1. February 5, 1878. 1-311 pp., 2 ll.

- Art I. Notes on the ornithology of the lower Rio Grande of Texas, from observations made during the season of 1877, by George B. Sennett, of Erie, Pa., edited, with annotations, by Dr. Elliott Coues, U. S. A., pp. 1–66.
- Art. II. Descriptions of fishes from the Cretaceous and Tertiary deposits west of the Mississippi River, by E. D. Cope, pp. 67-77.
- Art. III. Descriptions of new Tineina from Texas, and others from more northern localities, by V. T. Chambers, pp. 79-106.
- Art. IV. Tineina and their food plants, by V. T. Chambers, pp. 107–123.
- Art. V. Index to the described Tineina of the United States and Canada, by V. T. Chambers, pp. 125–167.
- Art. VI. Descriptions of Noctuidæ, chiefly from California, by A. R. Grote, pp. 169–187.
- Art. VII. A synopsis of the North American species of the genus Alpheus, by J. S. Kingsley, pp. 189–199.
- Art. VIII. Notes on the mammals of Fort Sisseton, Dakota, by C. E. McChesney, M. D., Acting Assistant Surgeon, U. S. A., annotated by Dr. Elliott Coues, U. S. A., pp. 201–218.
  - Art. IX. Studies of the American Herodiones. Part I. Synopsis of the American genera of Ardeidæ and Ciconiidæ; including description of three new genera and a monograph of the American species of the genus Ardea, Linn., by Robert Ridgway, pp. 219–251.

- Art. X. Notice of the butterflies collected by Dr. Edward Palmer in the arid regions of southern Utah and northern Arizona during the summer of 1877, by Samuel H. Scudder, pp. 253-258.
- Art. XI. Notes on the herpetology of Dakota and Montana, by Drs. Elliott Coues and H. C. Yarrow, pp. 259-291.
- Art. XII. On consolidation of the hoofs in the Virginian deer, by Dr. Elliott Coues, U. S. A., pp. 293-294.
- Art. XIII. On a breed of solid-hoofed pigs apparently established in Texas, by Dr. Elliott Coues, U. S. A., pp. 295–297.
- Art. XIV. Professor Owen on the Pythonomorpha, by E. D. Cope, pp. 299-311.
- No. 2. May 3, 1878. 313-543 pp., 2 ll., pl. 1.
  - Art. XV. The geographical distribution of the Mammalia, considered in relation to the principal ontological regions of the earth, and the laws that govern the distribution of animal life, by Joel Asaph Allen, pp. 313-377.
  - Art. XVI. Descriptions of new extinct vertebrata from the upper Tertiary and Dakota formations, by E. D. Cope, pp. 379–396.
  - Art. XVII. Notes on a collection of fishes from the Rio Grande, at Brownsville, Texas, by David S. Jordan, M. D., pp. 397– 406. [Continued on p. 663.]
  - Art. XVIII. A catalogue of the fishes of the fresh waters of North America, by David S. Jordan, M. D., pp. 405-442.
    - Art. XIX. Description of a fossil passerine bird from the insect-bearing shales of Colorado, by J. A. Allen, pp. 443–445, pl. 1.
      - Art. XX. The Coleoptera of the alpine regions of the Rocky Mountains, by John L. Le Conte, M. D., pp. 447-480.
    - Art. XXI. On the Orthoptera collected by Dr. Elliott Coues, U. S. A., in Dakota and Montana during 1873–74, by Prof. Cyrus Thomas, pp. 481–501.
  - Art. XXII. On the Hemiptera collected by Dr. Elliott Coues, U.S.A., in Dakota and Montana during 1873–74, by P. R. Uhler, pp. 503–512.
  - Art. XXIII. On the Lepidoptera collected by Dr. Elliott Coues, U. S. A., in Montana, during 1874, by W. H. Edwards, pp. 513-517.
  - Art. XXIV. An account of some insects of unusual interest from the Tertiary rocks of Colorado and Wyoming, by Samuel H. Scudder, pp. 519-543.
- No. 3. July 29, 1878. 545-745 pp., 2 ll.
  - Art. XXV. Field notes on birds observed in Dakota and Montana along the forty-ninth parallel during the seasons of 1873 and 1874, by Dr. Elliott Coues, U. S. A., late surgeon and naturalist, U. S. Northern Boundary Commission, pp. 545-661.
  - Art. XXVI. Notes on a collection of fishes from the Rio Grande, at Brownsville, Texas, continued [from p. 406], by D. S. Jordan, M. D., pp. 663-667.
  - Art. XXVII. Preliminary studies on the North American Pyralidæ, by A. R. Grote, pp. 669-705.
  - Art. XXVIII. Paleontological papers No. 6: Descriptions of new species of invertebrate fossils from the Laramie group, by C. A. White, M. D., pp. 707-719.

Art. XXIX. Paleontological papers No. 7: On the distribution of molluscan species in the Laramie group, by C. A. White, M. D., pp. 721-724.

Art. XXX. On some dark shale recently discovered below the Devonian limestones, at Independence, Iowa; with a notice of its fossils and description of new species, by S. Calvin, professor of geology, State University of Iowa, pp. 725–730.

Art. XXXI. On the mineralogy of Nevada, by W. J. Hoffman, M. D., pp. 731–745.

No. 4. December 11, 1878. 747-908 pp., 2 ll.

Art. XXXII. The fossil insects of the Green River shales, by Samuel H. Scudder, Cambridge, Mass., pp. 747-776.

Art. XXXIII. Report on the collection of fishes made by Dr. Elliott Coues, U. S. A., in Dakota and Montana during the seasons of 1873 and 1874, by David S. Jordan, M. D., pp. 777-799.

Art. XXXIV. Catalogue of phænogamous and vascular cryptogamous plants collected during the summers of 1873 and 1874 in Dakota and Montana along the forty-ninth parallel, by Dr. Elliott Coues, U. S. A.: with which are incorporated those collected in the same region at the same times by Mr. George M. Dawson, by Prof. J. W. Chickering, pp. 801-830.

Art. XXXV. On some striking products of erosion in Colorado, by F. M. Endlich, S. N. D., pp. 831-864.

Art. XXXVI. Paleontological papers No. 8: Remarks upon the Laramie group, by C. A. White, M. D., pp. 865-876.

Art. XXXVII. Synonymatic list of American Sciuri, or arboreal squirrels, by J. A. Allen, pp. 877–887.

Index. 889-908 pp.

Department of the Interior. Bulletin of the United States Geological and Geographical Survey of the Territories. F. V. Hayden, U. S. geologist-in-charge. 1879–80. Volume V. Washington: Government Printing Office. 1880.

8°. vii, 1072 pp., 8 ll., 4 pls.

No. 1. February 28, 1879. 1-152 pp., 4 ll., i-ii pls.

Art. I. Notes on the Aphididæ of the United States, with descriptions of species occurring west of the Mississippi, by Chas. V. Riley and J. Monell, pp. 1-32, pls. i-ii.

Art. II. The relations of the horizons of extinct vertebrata of Europe and North America, by E. D. Cope, pp. 33–54.

Art. III. Observations on the faunæ of the Miocene Tertiaries of Oregon, by E. D. Cope, pp. 55-69.

Art. IV. Notes on the birds of Fort Sisseton, Dakota Territory, by Chas. E. McChesney, acting assistant surgeon, U. S. A., pp. 71-103.

Art. V. Paleontological papers No. 9: Fossils of the Jura-Trias of southeastern Idaho, by C. A. White, M. D., pp. 105-117.

Art. VI Jura-Trias section of southeastern Idaho and western Wyoming, by A. C. Peale, M. D., pp. 119–123.

Art. VII. Fossil forests of the volcanic Tertiary formations of the Yellowstone National Park, by W. H. Holmes, pp. 125-132.

- Art. VIII. Paleontological Papers No. 10: Conditions of preservation of invertebrate fossils, by C. A. White, M. D., pp. 133-141.
  - Art. IX. Supplement to the bibliography of North American invertebrate paleontology, by C. A. White and H. Alleyne Nicholson, pp. 143-152.
- No. 2. September 6, 1879. 153-330 pp., 2 ll., iii-iv pls.
  - Art. X. On the Coatis (genus Nasua, Storr), by J. A. Allen, pp. 153-174.
  - Art. XI. On the present status of Passer domesticus in America, with special reference to the Western States and Territories, by Dr. Elliott Coues, U. S. A., pp. 175-193.
  - Art. XII. The Laramie group of western Wyoming and adjacent regions, by A. C. Peale, M. D., pp. 195-200.
  - Art. XIII. On Lithophane and new Noctuidæ, by A. R. Grote, pp. 201–208.
  - Art. XIV. Paleontological papers No. 11: Remarks upon certain Carboniferous fossils from Colorado, Arizona, Idaho, Utah, and Wyoming, and certain Cretaceous corals from Colorado, together with descriptions of new forms, by C. A. White, M. D., pp. 209–221.
    - Art. XV. The so-called Two-Ocean Pass, by F. V. Hayden, pp. 223–225, pls. iii-iv.
  - Art. XVI. On the extinct species of Rhinoceridæ of North America and their allies, by E. D. Cope, pp. 227–237.
  - Art. XVII. Second installment of American ornithological bibliography, by Dr. Elliott Coues, U. S. A., pp. 239-330.
- No. 3. November 30, 1879. 331-520 pp., 1 l.
  - Art. XVIII. On the species of the genus Bassaris, by J. A. Allen, pp. 331-340.
    - Art. XIX. The American Bembecidæ: tribe Stizini, by W. H. Patton, pp. 341–347.
      - Art. XX. List of a collection of aculeate Hymenoptera made by Mr. S. W. Williston in northwestern Kansas, by W. H. Patton, pp. 349-370.
    - Art. XXI. Further notes on the ornithology of the lower Rio Grande of Texas, from observations made during the spring of 1878, by George B. Sennett; edited, with annotations, by Dr. Elliott Coues, U. S. A., pp. 371-440.
    - Art. XXII. Additional lists of elevations, by Henry Gannett, pp. 441-470.
  - Art. XXIII. Generic arrangement of the bees allied to Melissodes and Anthophora, by W. H. Patton, pp. 471–479.
  - Art. XXIV. Annotated list of the birds of Michigan, by Dr. Morris Gibbs, pp. 481–497.
  - Art. XXV. The Coleoptera of the alpine Rocky Mountain regions.—Part II, by John L. Le Conte, M. D., pp. 499-520 [continued from vol. 4, p. 480].
- No. 4. September 30, 1880. 521-1072 pp., 1 l.
  - Art. XXVI. Third installment of American ornithological bibliography, by
    Dr. Elliott Coues, U. S. A., pp. 521-1066.
- Index, pp. 1067-1072.

Department of the Interior. Bulletin of the United States Geological and Geographical Survey of the Territories. F. V. Hayden,

- U. S. geologist-in-charge. 1882. Volume VI. Washington: Government Printing Office. 1882.
  - 8°. vi, 598 pp., 10 ll., 14 pls., 2 maps, 3 illustrations.
    - No. 1. February 11, 1881. 1-202 pp., 6 ll., i-iv pls.
      - Art. I. The vegetation of the Rocky Mountain region and a comparison with that of other parts of the world, by Asa Gray and Joseph D. Hooker, pp. 1–77.
      - Art. II. On some new Batrachia and Reptilia from the Permian beds of Texas, by E. D. Cope, pp. 79–82.
      - Art. III. On a wading bird from the Amyzon shales, by E. D. Cope, pp. 83–85.
      - Art. IV. Osteology of Spectyto cunicularia var. hypogæa, by R. W. Schufeldt, Acting Assistant Surgeon, U. S. Army, pp. 87–117, pls. i-ii.
      - Art. V. Osteology of Eremophila alpestris, by R. W. Shufeldt, Acting Assistant Surgeon, U. S. Army, pp. 119-147, pls. iii-iv.
      - Art. VI. Preliminary list of the North American species of Agrotis, with descriptions, by A. R. Grote, pp. 149–164.
      - Art. VII. On the Nimravidæ and Canidæ of the Miocene period, by E. D. Cope, pp. 165–181.
      - Art. VIII. On the vertebrata of the Wind River Eocene beds of Wyoming, by E. D. Cope, pp. 183–202.
    - No. 2. September 19, 1881. 203–397 pp., 2 ll., v-xiv pls., 2 maps, 3 illustrations. Art. IX. Annotated list of the birds of Nevada, by W. J. Hoffman, M. D., pp. 203–256, 1 map, 2 illustrations.
      - Art. X. North American moths, with a preliminary catalogue of species of Hadena and Polia, by Aug. R. Grote, pp. 257–277.
      - Art. XI. The Tertiary lake-basin at Florissant, Colorado, between South and Hayden parks, by Samuel H. Scudder, pp. 279-300, 1 map.
      - Art. XII. Revision of the genus Sciurus, by Dr. E. L. Trouessart; translated, with notes, by Dr. Elliott Coues, U. S. Army, pp. 301-307.
      - Art. XIII. Osteology of the North American Tetraonidæ, by R. W. Shufeldt, M. D., First Lieut. Med. Dept., U. S. A., pp. 309–350, pls. v-xiii.
      - Art. XIV. Osteology of Lanius ludovicianus excubitorides, by R. W. Shufeldt, M. D., First Lieut. Med. Dept., U. S. A., pp. 351-359, pl. xiv.
      - Art. XV. Review of the Rodentia of the Miocene period of North America, by E. D. Cope, N. A. S., pp. 361–386.
      - Art. XVI. On the Canidæ of the Loup Fork epoch, by E. D. Cope, pp. 387-390.
      - Art. XVII. On a crayfish from the lower Tertiary beds of western Wyoming, by A. S. Packard, jr., pp. 391–397, 1 illustration.
    - No. 3. August 30, 1882. 399–598 pp., 2 ll.
      - Art. XVIII. Preliminary list of works and papers relating to the mammalian orders Cete and Sirenia, by Joel Asaph Allen, pp. 399-562.
        - Art. XIX. New moths, with partial catalogue of Noctuæ, by A. R. Grote, A. M., pp. 563-578.
          - Art. XX. New moths, principally collected by Mr. Roland Thaxter in Maine, with notes on noxious species and remarks on classification, pp. 579-591.
    - Index. 593-598 pp.

#### MISCELLANEOUS PUBLICATIONS.

Department of the Interior. United States Geological Survey of the Territories. F. V. Hayden, U. S. Geologist in charge. Miscellaneous publications. No. 1[-12]. Washington: Government Printing Office. 1873[-1880].

- 8°. 15 vols.
  - 1. Lists of elevations in that portion of the United States west of the Mississippi River. [Second edition.a] Collated and arranged by Henry Gannett, Assistant. 1873. 47 pp.
  - List of elevations principally in that portion of the United States west of the Mississippi River. Third edition. Collated and arranged by Henry Gannett. 1875. 72, ii pp.
  - List of elevations principally in that portion of the United States west of the Mississippi River. Fourth edition. Collated and arranged by Henry Gannett, M. E. 1877. x, 167 pp., 1 map.
  - 2. Meteorological observations during the year 1872 in Utah, Idaho, and Montana, prepared for publication by Henry Gannett. Assistant. 1873. 120 pp.
  - Birds of the Northwest: A hand-book of the ornithology of the region drained by the Missouri River and its tributaries. By Elliott Coues, captain and assistant surgeon, U. S. Army. 1874. xi, 791 pp.
  - Synopsis of the flora of Colorado, by Thomas C. Porter and John M. Coulter. March 20, 1874. 5 ll., 180 pp.
  - Descriptive catalogue of the photographs of the United States Geological Survey of the Territories for the years 1869 to 1873, inclusive. W. H. Jackson, photographer. 1874. 83 pp.
  - Descriptive catalogue of the photographs of the United States Geological Survey of the Territories for the years 1869 to 1875, inclusive. Second edition.
     W. H. Jackson, photographer. 1875. 81 pp., 14 illustrations.
  - Meteorological observations made during the year 1873 and the early part of the year 1874 in Colorado and Montana Territories. Prepared for publication by George B. Chittenden. 1874. 57 pp.
  - Ethnography and philology of the Hidatsa Indians, by Washington Matthews, assistant surgeon United States Army. 1877. vi, 239 pp.
    - 8. Fur-bearing animals: A monograph of North American Mustelidæ, in which an account of the wolverine, the martens or sables, the ermine, the mink and various other kinds of weasels, several species of skunks, the badger, the land and sea otters, and numerous exotic allies of these animals, is contributed to the history of North American mammals. By Elliott Coues, captain and assistant surgeon, United States Army, secretary and naturalist of the Survey. Illustrated with sixty figures on twenty plates. 1877. xiv, 348 pp., 20 pls.
  - 9. Descriptive catalogue of photographs of North American Indians, by W. H. Jackson, photographer of the Survey. 1877. vi, 124 pp.
  - 10. Bibliography of North American invertebrate paleontology, being a report upon the publications that have hitherto been made upon the invertebrate paleontology of North America, including the West Indies and Greenland. By C. A. White, M. D., paleontologist of the United States Geological Survey, and H. Alleyne Nicholson, M. D., D. Sc., professor at the University of Saint Andrews, Scotland. 1878. 132 pp.

 $a\,\mathrm{The}$  first edition of this publication was by Cyrus Thomas, and is catalogued under unclassified publications, p. 32.

11. Birds of the Colorado Valley: A repository of scientific and popular information concerning North American ornithology, by Elliott Coues. Ηλθ ηλδε χελιδών χαλάς ὥρας ἄγουσα. Part first, Passeres to Laniidæ. Bibliographical Appendix, seventy illustrations. 1878. xvi, 807 pp.

12. History of North American pinnipeds: A monograph of the walruses, sealions, sea-bears, and seals of North America, by Joel Asaph Allen, assistant in the Museum of Comparative Zoology, at Cambridge, special collaborator of the Survey. 1880. xvi, 785 pp.

#### UNCLASSIFIED PUBLICATIONS.a

[1] Forty-second Congress, first session, House of Representatives Ex. Doc. No. 19. Final Report of the United States Geological Survey of Nebraska and portions of the adjacent Territories, made under the direction of the Commissioner of the General Land Office. By F. V. Hayden, United States geologist. March 23, 1871. Ordered to be printed. Washington: Government Printing Office 1872.

8° 264 pp., 11 il., 11 pls., 1 map.

[Part I.] Geology, by F. V. Havden, pp. 3-79.

Part II. Paleontology, Report on the paleontology of eastern Nebraska, with some remarks on the Carboniferous rocks of that district, by F. B. Meek. pp. 81–245, pls. 1–11.

Part III. Entomology, Notes on the Orthoptera collected by Dr. F. V. Hayden in Nebraska, by Samuel H. Scudder, pp. 247-261.

Index, pp. 263–264.

- [2] List of elevations and distances in that portion of the United States west of the Mississippi River. Collated and arranged by Prof. C. Thomas, Asst. U. S. Geol. Surv., under Dr. F. V. Hayden. Washington: Government Printing Office. 1872.
  12mo. 31 pp.
- [3] Department of the Interior. United States Geological Survey of the Territories. F. V. Hayden, U. S. geologist in charge. Profiles, sections and other illustrations, designed to accompany the final report of the chief geologist of the Survey and sketched under his directions by Henry W. Elliott. Under authority of the Secretary of the Interior. New York. Julius Bien. 1872.
  - 4°. 2 pp., 65 pls.
- [4] Department of the Interior. United States Geological Survey of the Territories. F. V. Hayden, U. S. Geologist in charge. Synopsis of new vertebrata from the Tertiary of Colorado, obtained during the summer of 1873. By Professor E. D. Cope. [Extracted from the Seventh Annual Report of the United States Geological Survey of the Territories, F. V. Hayden, U. S. geologist-in-charge.] Washington: Government Printing Office. October, 1873.
  - 8° 19 pp.

Note.—Only quasi-extracted from the report of which it ostensibly forms part. It was published in advance of the Seventh Annual Report as a separate pamphlet, and finally appears in that report so much modified as to be in effect a different article.

- [5] Department of the Interior. Catalogue of the publications of the United States Geological Survey of the Territories. F. V. Hayden, geologist-in-charge. Washington: Government Printing Office. 1874.
  - 8°. 20 pp.
- [6] Department of the Interior. United States Geological and Geographical Survey of the Territories. F. V. Hayden, in charge. Catalogue of the photographs of the U. S. Geological and Geographical Survey of the Territories. By W. H. Jackson, photographer. Washington: Government Printing Office. 1875.

18mo. 51 pp.

[7] Department of the Interior. U. S. Geological and Geographical Survey of the Territories. F. V. Hayden, U. S. geologist-in-charge. The Grotto Geyser of the Yellowstone National Park. With a descriptive note and map, and an illustration by the Albert-type process. [n. d., n. p. Washington: Government Printing Office. 1876.]

Oblong folio. 1 p. l., 2 ll of text, 1 illustration, 1 map.

- [8] Department of the Interior. Catalogue of the publications of the U. S. Geological and Geographical Survey of the Territories. F. V. Hayden, geologist in charge. Second edition. (Revised to December 31, 1876.) Washington: Government Printing Office. 1877.
  - 8°. 38 pp.
- [9] Department of the Interior. U. S. Geological and Geographical Survey of the Territories. F. V. Hayden, in charge. Bulletin of the United States Entomological Commission. Destruction of the young or unfledged locusts. No. 1. Washington: Government Printing Office. 1877.
  - 8°. 12 pp.
- [10] Department of the Interior. U. S. Geological and Geographical Survey of the Territories. F. V. Hayden, U. S. geologist-in-charge. Bulletin of the United States Entomological Commission. On the natural history of the Rocky Mountain locust, and on the habits of the young or unfledged insects as they occur in the more fertile country in which they will hatch the present year. No. 2. Washington: Government Printing Office. May, 1877.
  - 8° 15 pp.
- [11] Department of the Interior. U. S. Geological and Geographical Survey of the Territories. F. V. Hayden, in charge. Bulletin of the United States Entomological Commission. Destruction of the young or unfledged locusts. No. 1. Second edition. Washington: Government Printing Office. June 1877.
  - 8°. 15 pp.

Note.—Somewhat modified from the first edition.

[12] Department of the Interior. U. S. Geological and Geographical Survey of the Territories. F. V. Hayden, U. S. geologist-incharge. Bulletin of the United States Entomological Commission. On the natural history of the Rocky Mountain locust and on the habits of the young or unfledged insects as they occur in the more fertile country in which they will hatch the present year. No. 2. Second edition. Washington: Government Printing Office. June, 1877.

8°. 14 pp.

Note.—Somewhat modified from the first edition.

[13] Department of the Interior. Preliminary report of the field work of the U. S. Geological and Geographical Survey of the Territories for the season of 1877. Washington: Government Printing Office. 1877.

8°. 35 pp.

- [14] Department of the Interior. United States Geological Survey. F.V. Hayden, U. S. geologist-in-charge. First "Annual Report of the United States Entomological Commission for the year 1877 relating to the Rocky Mountain locust and the best methods of preventing its injuries and of guarding against its invasions, in pursuance of an appropriation made by Congress for this purpose. With maps and illustrations. Washington: Government Printing Office. 1878.
  - 8° xvi, 477. 295 pp., 5 ll., 5 pls., 3 maps.
- [15] Department of the Interior. U. S. Geological and Geographical Survey of the Territories. F. V. Hayden, U. S. geologist-incharge. Illustrations of Cretaceous and Tertiary plants of the western Territories of the United States. Washington: Government Printing Office. 1878.
  - 4°. 28 ll., 28 pls.
- [16] Department of the Interior. United States Geological and Geographical Survey. F. V. Hayden, U. S. geologist-in-charge. Preliminary report of the field work of the U. S. Geological and Geographical Survey of the Territories for the season of 1878. By F. V. Hayden. Washington: Government Printing Office. 1878.
  - 8°. 29 pp.
- [17] Department of the Interior Catalogue of the publications of the U. S. Geological and Geographical Survey of the Territories F. V. Hayden, United States geologist Third edition Revised to December 31, 1878. Washington: Government Printing Office. 1879.

8° 54 pp.

a The Second Annual Report of the Entomological Commission was published by the Department of the Interior; the Third Annual Report was published by the Department of Agriculture.

#### MAPS.

#### ATLAS OF COLORADO.

# [FIRST EDITION.]

[Vignette] Department of the Interior. United States Geological and Geographical Surveys of the Territories. Geological and Geographical Atlas of Colorado and portions of adjacent territory by F. V. Hayden U. S. Geologist in charge. 1877 Julius Bien, Lith.

Folio, 2 ll. (title page and legend), 20 double folio atlas sheets.

Sheets I–IV are triangulation, drainage, land classification, and geologic maps of Colorado west of longitude 102°, on the scale of 12 miles to the inch.

Sheets V-XVI are topographic (contour) and geologic maps of Colorado and adjacent States, between meridians 104° 30′ and 109° 30′ and parallels 36° 45′ and 40° 30′, on the scale of 4 miles to the inch.

Sheets XVII and XVIII contain three geologic sections across the State, west of the longitude  $104^{\circ}~30'$ .

Sheets XIX and XX are panoramic views of the Pikes Peak group, Sawatch Range, central portion of West Elk Mountains, Twin Lakes, southwestern border of the Mesa Verde, San Juan Mountains, and La Plata Mountains.

#### [SECOND EDITION.]

[Vignette] Department of the Interior. United States Geological and Geographical Surveys of the Territories. Geographical and Geological atlas of Colorado and portions of adjacent territory by F. V. Hayden U. S. Geologist in charge Corrected to date and printed in accordance with an act of Congress approved February 9th, 1881. Julius Bien, Lith.

Folio, 2 ll. (title page and legend), 20 double folio atlas sheets. Contents same as first edition.

#### SEPARATE MAPS. $\alpha$

#### GENERAL.

Map showing primary triangulation of 1877.

General geologic map of area explored from 1869 to 1880. Limiting meridians, 90° and 114°; limiting parallels, 35° and 48°. Scale, 41.03 miles to the inch.

#### COLORADO.

Land survey work in Colorado. Scale, 4 miles to the inch. Published for field use of Survey only.

Central Colorado, showing regions surveyed in 1873. Shows drainage only. Scale, 8 miles to the inch. Also in report for 1873.

aIn the list below are given the maps issued independent of other publications. Maps accompanying the reports are listed in the "Index," pages 134-139.

Map showing primary and secondary triangulation of 1873. Limiting meridians,  $104^{\circ}$  15' and  $107^{\circ}$ ; limiting parallels,  $38^{\circ}$  and  $40^{\circ}$  30'. Scale, 8 miles to the inch. Also in report for 1873.

Preliminary map of the San Juan country. Shows drainage only. Limiting meridians, 106° 10′ and 108°; limiting parallels, 37° 15′ and 38° 15′. Scale, 4 miles to the inch. Also in Bull., vol. 1, No. 3, 2d series.

Preliminary map of central Colorado, showing region surveyed in 1873 and 1874. Limiting meridians, 104° 30′ and 107° 30′; limiting parallels, 37° and 40° 30′. Also in report for 1874.

Drainage map of Colorado. Portion of State west of one hundred and second meridian. Scale, 12 miles to the inch. Also in Atlas of Colorado.

Economic map of Colorado, showing areas of arable, pasture, timber, desert, coal, and other lands. Portion of State west of one hundred and second meridian. Scale, 12 miles to the inch. Published also in Atlas of Colorado.

General geologic map of Colorado. Portion west of one hundred and second meridian. Scale, 12 miles to the inch. Also in Atlas of Colorado.

#### IDAHO.

Parts of Idaho, Montana, and Wyoming. Limiting meridians, 109 and 114°; limiting parallels, 43° and 46°. Hachure. Scale, 10 miles to the inch.

Sources of Snake River and portions of headwaters of Madison and Yellowstone rivers. Topography shown by brush work. Scale, 5 miles to the inch.

Geologic map on above base.

Drainage map of portions of Wyoming, Idaho, and Utah. Limiting meridians, 107° and 112° 30′; limiting parallels, 42° 45′ and 44°. Scale, 8 miles to the inch.

#### MONTANA.

Parts of Idaho, Montana, and Wyoming. Limiting meridians,  $109^{\circ}$  and  $114^{\circ}$ ; limiting parallels,  $43^{\circ}$  and  $46^{\circ}$ . Hachure. Scale, 10 miles to the inch.

Montana and Wyoming Territories, embracing most of the country drained by Madison, Gallatin, and Upper Yellowstone rivers. Contour interval, 100 feet. Scale, 4 miles to the inch.

Geologic map on same base.

#### UTAH.

Drainage map of portions of Wyoming, Idaho, and Utah. Limiting meridians,  $107^{\circ}$  and  $112^{\circ}$  30'; limiting parallels, 42–45' and 44°. Scale, 8 miles to the inch.

#### WYOMING.

Yellowstone National Park. Limiting meridians, 110° and 111-: limiting parallels, 44° 10′ and 45°. Scale, 2 miles to the inch. Contour interval, 100 feet.

Geologic map on above base.

Yellowstone National Park. Hachure map. Scale, 10 miles to the inch. Also in report for 1871.

Upper Gevser Basin. Hachure. Scale, 600 feet to the inch. Upper Geyser Basin. Hachure. Scale, 880 feet to the inch. Upper Gevser Basin. Hachure. Scale. 500 feet to the inch. Lower Geyser Basin. Hachure. Scale, 1,500 feet to the inch. Lower Geyser Basin. Hachure. Scale, 880 feet to the inch. Lower Geyser Basin. Hachure. Scale, 800 feet to the inch. Gibbon Gevser Basin. Hachure. Scale, 200 feet to the inch. Gibbon Geyser Basin. Hachure. Scale, 400 feet to the inch. Shoshone Geyser Basin. Hachure. Scale, 125 feet to the inch.

Egeria Springs, Firehole River. Hachure. Scale, 250 feet to the inch.

Mammoth Hot Springs. Hachure. Scale, 400 feet to the inch. Hot Springs on Witch Creek. Scale, 1,600 feet to the inch.

Yellowstone Lake. Scale, 2 miles to the inch.

Parts of Idaho, Montana, and Wyoming. Limiting meridians, 109° and 114°; limiting parallels, 43° and 46°. Hachure. Scale, 10 miles to the inch.

Montana and Wyoming Territories, embracing most of the country drained by Madison, Gallatin, and Upper Yellowstone rivers. Contour interval, 100 feet. Scale, 4 miles to the inch.

Geologic map on same base.

Sources of Snake River and portions of headwaters of Madison and Yellowstone rivers. Topography shown by brush work. Scale, 5 miles to the inch.

Geologic map on above base.

Geologic map of parts of central Wyoming. Limiting meridians, 107° and 109° 30′; limiting parallels, 41° 45′ and 43°. Scale, 4 miles to the inch.

Map showing primary triangulation of 1877-78. Scale, 12 miles to the inch.

Drainage map of portions of Wyoming, Idaho, and Utah. Limiting meridians,  $107^{\circ}$  and  $112^{\circ}$  30'; limiting parallels,  $42^{\circ}$  45' and  $44^{\circ}$ . Scale, 8 miles to the inch.

# UNITED STATES GEOLOGICAL EXPLORATION OF THE FORTIETH PARALLEL (KING).

# ANNUAL REPORTS.

#### 1871.

[Report of Clarence King, geologist in charge of the Geological Exploration of the 40th Parallel.] Annual Report of the Chief of Engineers to the Secretary of War for the year 1871. Appendix Z, pp. 1027–1030.

#### 1872.

Geological Exploration of the 40th Parallel, from the Sierra Nevada to the eastern slope of the Rocky Mountains. Annual Report of Chief of Engineers to the Secretary of War for the year 1872, pp. 101–102.

#### 1873.

Report of Mr. Clarence King, geologist, in charge of the Geological Exploration of the Fortieth Parallel, from Sierra Nevada to the eastern slope of the Rocky Mountains. Annual Report of the Chief of Engineers to the Secretary of War for 1873, Appendix DD, pp. 1203–1210.

#### 1874.

Annual Report of Mr. Clarence King, geologist, for the fiscal year ending June 30, 1874. Annual Report of the Chief of Engineers to the Secretary of War for 1874, Part II, Appendix EE, pp. 477–480.

#### 1875.

Annual Report of Mr. Clarence King, geologist, for the fiscal year ending June 30th, 1875. Annual Report of the Chief of Engineers to the Secretary of War for 1875, Part II, Appendix KK, pp 919–920.

#### 1876.

Annual Report of Mr. Clarence King, geologist, for the fiscal year ending June 30, 1876. Annual Report of the Chief of Engineers to the Secretary of War for 1876, Part III, Appendix II, pp. 217–218.

#### 1877.

Annual Report of Mr. Clarence King, geologist, for the fiscal year ending June 30, 1877. Annual Report of the Chief of Engineers to the Secretary of War for 1877, Part II, Appendix MM, p. 1207.

# 1878.

Annual Report of Clarence King, geologist, for the fiscal year ending June 30, 1878. Annual Report of the Chief of Engineers to the Secretary of War for 1878, Part III, Appendix MM, p. 1419.

# FINAL REPORTS OR MONOGRAPHS.

[Vignette] Professional Papers of the Engineer Department, U. S. Army. No. 18. Report of the Geological Exploration of the Fortieth Parallel made by order of the Secretary of War according to acts of Congress of March 2, 1867, and March 3, 1869, under the direction of Brig. and Byt. Major General A. A. Humphreys, Chief of Engineers, by Clarence King, U. S. geologist.

Volume I [-VII].

- 4°. 7 vols.
  - I. Systematic geology, by Clarence King, U. S. Geologist. 1878. xii, 803 pp., 16 tables, 28 pls. (2 pls. marked ''Plate I,'' 1 pl. not numbered), 12 maps and atlas of 12 sheets folio. a
  - II. Descriptive geology, by Arnold Hague and S. F. Emmons. 1877. xiii, 890 pp., 26 pls.
  - III. Mining industry, by James D. Hague, with geological contributions by Clarence King. 1870. xv, 647 pp., 37 pls, frontispiece, and atlas of 14 sheets folio. a
  - IV. Part I, Paleontology, by F. B. Meek. Part II, Paleontology, by James Hall and R. P. Whitfield. Part III, Ornithology, by Robert Ridgway. 1877. xii, 669 pp., 18 ll., 24 pls.
    - V. Botany, by Sereno Watson, aided by Prof. Daniel C. Eaton and others. 1871. liii, 525 pp., 1 map, 40 pls.
  - VI. Microscopical petrography, by Ferdinand Zirkel. 1876. xv, 297 pp., 12 pls.
  - VII. Odontornithes: A monograph on the extinct toothed birds of North America, by Othniel Charles Marsh, professor of paleontology in Yale College. 1880. xv, 201 pp., 34 ll., 34 pls.

# ATLAS.

[Vignette] Engineer Department, U. S. A., Geological and Topographical Atlas accompanying the report of the Geological Exploration of the Fortieth Parallel, made by authority of the Honorable Secretary of War, under the direction of Brig. and Bvt. Major General

A. A. Humphreys, Chief. of Engineers, U. S. A., by Clarence King, U. S. geologist-in-charge. 1876. Julius Bien Lith.

Folio, 2 ll., (title and legend), 1 single and 11 double folio sheets (1 single folio map, 10 double folio maps, 1 double folio section).

Contains topographic (shaded) map of Cordilleran region, limiting meridians  $104^{\circ}$ 

and 124°; limiting parallels 29° and 50°. Scale, 60 miles to the inch.

Also contains four geologic and four topographic (shaded) maps, on scale of 4 miles to the inch, of the following areas:

Sheet I. Longitude, 104° 30′–107° 37′; latitude, 40° 20′–41° 54′. Sheet II. Longitude, 107° 37′–110° 43′; latitude, 40° 16′–41° 50′.

Sheet III. Longitude, 110° 43′–113° 50′; latitude, 40° 13′–41° 46′.

Sheet IV. Longitude, 113° 50′-116° 56′; latitude, 39° 55′-41° 29′.

[Vignette] United States Geological Exploration of the Fortieth Parallel, Clarence King, Geologist in charge. Atlas accompanying Volume III on mining industry. [List of plates.] Engraved and printed by Julius Bien, New York.

Folio, 1 l. (title page), 14 pls.

# SPECIAL PUBLICATION.

United States Geological Exploration of the 40th Parallel. Clarence King, U. S. geologist-in-charge. List of plants collected in Nevada and Utah, 1867-69; numbered as distributed. Sereno Watson, collector.

# UNITED STATES GEOGRAPHICAL AND GEOLOGICAL SURVEY OF THE ROCKY MOUNTAIN REGION (POWELL).

# EARLY REPORTS BY J. W. POWELL. a

Forty-second Congress, second session, House of Representatives, Mis. Doc. No 173. Survey of the Colorado River of the West. Letter from the Secretary of the Smithsonian Institution, transmitting report preliminary for continuing the survey of the Colorado of the West and its tributaries, by Professor Powell. April 5, 1872.—Referred to the Committee on Appropriations and ordered to be printed.

Forty-second Congress, third session, House of Representatives, Mis. Doc. No 76. Report of the survey of the Colorado of the West. Letter from the Secretary of the Smithsonian Institution, transmitting a report of the survey of the Colorado of the West and its tributaries. January 31, 1873.—Referred to the Committee on Appropriations and ordered to be printed.

8°. 16 pp.

Forty-third Congress, first session, House of Representatives, Mis. Doc. No 265. Professor Powell's Report on the survey of the Colorado of the West. Letter from the Secretary of the Smithsonian Institution, transmitting a report of Professor Powell on the survey of the Colorado River of the West and its tributaries, etc., etc. May 2, 1874. Referred to the Committee on Appropriations and ordered to be printed.

8°. 29 pp.

Report of explorations in 1873 of the Colorado of the West and its tributaries, by Professor J. W. Powell, under the direction of the Smithsonian Institution. Washington: Government Printing Office. 1874.

8°. 36 pp. (Same as House Mis Doc. 265, 43d Cong., 1st sess.).

Exploration of the Colorado River of the West and its tributaries. Explored in 1869, 1870, 1871, and 1872, under the direction of the Secretary of the Smithsonian Institution. [By J. W. Powell.] Washington: Government Printing Office. 1875

4°. xi, 291 pp., 2 ll., 72 illustrations.

a These reports were issued before the Powell survey was organized, but they are preliminary to the publications of that organization.

# FINAL REPORTS.

Department of the Interior. U. S. Geological and Geographical Survey of the Territories. Second division.—J. W. Powell, geologist in charge. Report on the geology of the eastern portion of the Uinta Mountains and a region of country adjacent thereto. With atlas. By J. W. Powell. Washington: Government Printing Office. 1876

4°, vii, 218 pp., 4 illustrations and atlas of 8 sheets folio.

Report on the Geological and Geographical Survey of the Rocky Mountain region, by J. W. Powell. Washington: Government Printing Office. 1877.

8° 19 pp., 1 map.

U. S. Geographical and Geological Survey of the Rocky Mountain Region. J. W. Powell, in charge. Preliminary report on the paleontology of the Black Hills, by R. P. Whitfield, containing descriptions of new species of fossils from the Potsdam, Jurassic, and Cretaceous formations of the Black Hills of Dakota. Washington: Government Printing Office. July, 1877.

8° 49 pp.

Department of the Interior. U. S. Geographical and Geological Survey of the Rocky Mountain Region. J. W. Powell, in charge. Report on the geology of the Henry Mountains. By G. K. Gilbert. [Seal of the Department] Washington: Government Printing Office. 1877 [second edition, 1880]

4° x, 160 pp., 27 ll. containing illustrations

Report on the lands of the arid region of the United States, with a more detailed account of the lands of Utah. With maps. By J. W. Powell. Second edition.<sup>a</sup> Washington: Government Printing Office. 1879.

4°. xv, 195 pp., 5 maps.

Department of the Interior. U. S. Geographical and Geological Survey of the Rocky Mountain Region. J. W. Powell, in charge. Report on the geology and resources of the Black Hills of Dakota, with atlas, by Henry Newton, E. M., and Walter P. Jenney, E. M. [Seal of the Department] Washington. Government Printing Office. 1880.

4°. xvii, 566 pp., 23 ll., frontispiece, 28 illustrations and atlas containing 3 sheets folio.

Department of the Interior. U. S. Geographical and Geological Survey of the Rocky Mountain Region. J. W. Powell, in charge, Report on the geology of the high plateaus of Utah, with atlas, by C. E. Dutton, Captain of Ordnance, U. S. A. [Seal of the Department] Washington Government Printing Office 1880

4°. xxxii, 307 pp., 11 heliotypes, 2 pls., 2 unnumbered illustrations, atlas of 8 sheets folio.

# CONTRIBUTIONS TO NORTH AMERICAN ETHNOLOGY.

Department of the Interior. U. S. Geographical and Geological Survey of the Rocky Mountain region. J. W. Powell in charge. [Vol. I, geologist in charge] Contributions to North American Ethnology. Volume I [-VII, IX] [Seal of the Department] Washington: Government Printing Office. 1877 [-1893]

4° 9 vols.

I. Tribes of the extreme Northwest, by W. H. Dall. Tribes of western Washington and northwestern Oregon, by Geo. Gibbs. 1877. xiv, 361 pp., 10 illustrations, 2 maps.

Part I. Tribes of the extreme Northwest, by W. H. Dall, pp. 1-106.

Appendix to Part I. Linguistics.

Notes on the natives of Alaska (communicated to the late George Gibbs, M. D., in 1862), by his excellency J. Furuhelm, late governor of the Russian-American colonies, pp. 111–116.

Terms of relationship used by the Innuit: A series obtained from natives of Cumberland Inlet, by W. H. Dall, pp. 117-119.

Comparative vocabularies [by George Gibbs and W. H. Dall], pp. 121–153.

Note on the use of numerals among the T'sim Si an', by George Gibbs, M.D., pp. 155–156.

Part II. Tribes of western Washington and northwestern Oregon, by George Gibbs, M. D., pp. 157–241.

Appendix to Part II. Linguistics, pp. 243-361.

Comparative vocabularies [by George Gibbs, W. F. Tolmie, and Gregory Mengarini], pp. 243–283.

Dictionary of the Niskwalli, by George Gibbs, M. D., pp. 285-361.

✓ II. The Klamath Indians of southwestern Oregon, by Albert Samuel Gatschet.
1890. 2 parts. cvii, 711 pp., 1 map; iii, 711 pp.

✓ III. Tribes of California, by Stephens Powers. 1877. 3 ll., 645 pp., frontispiece, 45 ll. containing illustrations, pocket map.

✓ IV. Houses and house life of the American aborigines, by Lewis H. Morgan. 1881. xiv, 281 pp., frontispiece, 28 ll. containing figures.

√ V. 1881. iii, 112, 32, xxxvii, 237 pp., 18 pls., 35 ll. containing figures.

Observations on cup-shaped and other lapidarian sculptures in the Old World and in America, by Charles Rau, iii, 112 pp., 35 ll.

On prehistoric trephining and cranial amulets, by Robert Fletcher, M. R. C. S. Eng. Act. Asst. Surgeon U. S. Army, 32 pp., 9 pls.

A study of the manuscript Troano, by Cyrus Thomas, Ph. D., with an introduction by D. G. Brinton, M. D., xxxvii, 237 pp., 9 pls.

✓ VI. The Cegiha language, by James Owen Dorsey. 1890. xviii, 794 pp.

√ VII. A Dakota-English dictionary, by Stephen Return Riggs; edited by James Owen Dorsey. 1890, x, 665 pp.

VIII. Not published.

√ IX. Dakota grammar, texts, and ethnography, by Stephen Return Riggs; edited by James Owen Dorsey. 1893. pp.

# UNITED STATES GEOGRAPHICAL SURVEYS WEST OF THE ONE HUNDREDTH MERIDIAN (WHEELER).

# ANNUAL REPORTS.

#### 1869.

- Engineer Department, U. S. Army. Preliminary report upon a reconnaissance through southern and southeastern Nevada, made in 1869, by First Lieut. Geo. M. Wheeler, Corps of Engineers, U. S. Army, assisted by First Lieut. D. W. Lockwood, Corps of Engineers, U. S. Army, under the orders of Brig. Gen. E. O. C. Ord, Bvt. Maj. Gen. U. S. Army, commanding Department of California. Washington: Government Printing Office. 1875.

4°. 72 pp.

#### 1871.

Preliminary report concerning explorations and surveys principally in Nevada and Arizona. Prosecuted in accordance with paragraph 2, special orders No. 109, War Department, March 18, 1871, and letter of instructions of March 23, 1871, from Brig. Gen. A. A. Humphreys, Chief of Engineers. Conducted under the immediate direction of 1st Lieut. George M. Wheeler, Corps of Engineers. 1871. Washington: Government Printing Office. 1872.

4° 96 pp., 1 map.

[Progress report], pp. 11-62.

Appendix A. Report of Daniel W. Lockwood, First Lieutenant of Engineers, pp. 62–76.

Appendix B. Report of Second Lieutenant D. A. Lyle, United States Artillery, pp. 76-90.

Appendix C. Report of Edward P. Austin, astronomical assistant, pp. 91–92.

Appendix D. Report of G. K. Gilbert, geological assistant, pp. 92-96.

#### 1872.

Engineer Department, United States Army. Progress report upon geographical and geological explorations and surveys west of the one hundredth meridian, in 1872, under the direction of Brig. Gen. A. A. Humphreys, Chief of Engineers, United States Army, by First Lieut. George M. Wheeler, Corps of Engineers, in charge. Washington: Government Printing Office. 1874.

4°. 56 pp., 5 pls. and 1 map.

[Progress report], pp. 7-43, pls. i-v, map.

Appendix A. Preliminary astronomical report, by John H. Clark, astronomical assistant, pp. 44-45.

Appendix B. Preliminary astronomical report, by William W. Maryatt, astronomical assistant, pp. 45–47.

Appendix C. Report by First Lieut. W. L. Marshall concerning the sextant astronomical observations, pp. 47-48.

Appendix D. Preliminary geological report, by G. K. Gilbert, chief geological assistant, expedition of 1872, pp. 48–52.

Appendix E. Report upon natural history collections, by Acting Assistant Surgeon H. C. Yarrow, surgeon and naturalist, pp. 52-55.

Appendix F. Preliminary ethnological report by M. S. Severance, pp. 55-56.

#### 1873.

Annual report upon the geographical surveys and explorations west of the one hundredth meridian, in Nevada, Utah, Colorado, New Mexico, and Arizona, by George M. Wheeler, First Lieutenant of Engineers, U. S. A.; being Appendix EE of the Annual Report of the Chief of Engineers for 1873. Washington: Government Printing Office. 1873.

8° 11 pp., 1 map.

#### 1874.

Annual report upon the geographical explorations and surveys west of the one hundredth meridian, in California, Nevada, Utah, Arizona, Colorado, New Mexico, Wyoming, and Montana, by George M. Wheeler, First Lieutenant of Engineers, U. S. A.; being Appendix FF of the Annual Report of the Chief of Engineers for 1874. Washington: Government Printing Office. 1874.

8°. 130 pp., 1 map.

[Progress report], pp. 3-112, map.

Plan for publication of reports and maps, with estimates. Summary of publica-

tions to present time, pp. 112-114.

Notes on the Eocene and Pliocene lacustrine formations of New Mexico, including descriptions of certain new species of vertebrates, by Prof. E. D. Cope, paleontologist to the expedition, pp. 115–130.

#### 1875.

Annual report upon the geographical explorations and surveys west of the one hundredth meridian in California, Nevada, Nebraska, Utah, Arizona, Colorado, New Mexico, Wyoming and Montana, by George M. Wheeler, First Lieutenant of Engineers, U. S. A.; being Appendix LL of the Annual Report of the Chief of Engineers for 1875. Washington: Government Printing Office. 1875

8°. iv, 196 pp., 2 ll., 9 pls., 2 maps, 1 diagram.

[Progress report], pp. 3-37, pl. i, 2 maps.

Appendix A. Executive report of Lieutenant William L. Marshall, Corps of Engineers, on the operations of party No. 1, division 1, field season of 1874, pp. 37-40.

Appendix B. Executive report of Lieutenant P. M. Price, Corps of Engineers, on the operations of party No. 1, second division, field season of 1874, pp. 40-41. Appendix C. Executive report of Lieutenant R. Birnie, jr., Thirteenth United States Infantry, on the operations of party No. 2, first division, field season of 1874, pp. 41–43.

Appendix D. Executive report of Lieutenant Stanhope E. Blunt, Ordnance Corps, on the operations of party No. 2, second division, field season of 1874, pp. 43-44.

Appendix E. Executive report of Lieutenant C. W. Whipple, Third United States Artillery, on the operations of party No. 1, first division, and subparties, field season of 1874, pp. 44–46.

Appendix F. Meteorology and hypsometry, field season of 1874, by Lieutenant W. L. Marshall, Corps of Engineers, pp. 47–60, diagram.

Appendix G 1. Report on the geology of that part of northwestern New Mexico examined during the field season of 1874, by E. D. Cope, paleontologist and geologist, pp. 61–97, pls. ii–vi.

Appendix G 2. Geological and mineralogical report on portions of Colorado and New Mexico, by Dr. O. Loew, mineralogist and chemist, pp. 97–116.

Appendix H 1. Preliminary botanical report, with remarks upon the general topography of the region traversed in New Mexico and Arizona; its climatology, forage plants, timber, irrigation, sanitary conditions, etc., by Dr. J. T. Rothrock, acting assistant surgeon, United States Army, pp. 117–129, pls. vii, viii.

Appendix H 2. Report upon the agricultural resources of northern New Mexico and southern Colorado, with analyses of soils, plants, etc., by Dr. O. Loew, pp. 129–139.

Appendix I 1. Zoological report, field season of 1874.

- I. General itinerary, by Acting Assistant Surgeon H. C. Yarrow, U. S. Army, pp. 139-148.
- II. Notes upon the ornithology of the regions traversed, by H. W. Henshaw, ornithological assistant, pp. 149-150.
- III. Notes on the ornithology observed by Mr. C. E. Aiken, assistant, pp. 150-153.

Appendix I 2. Annotated list of the birds of Arizona, by H. W. Henshaw, ornithological assistant, pp. 153-166.

Appendix J. Ethnology, philology, and ruins.

 Report on the remains of population observed on and near the Eocene Plateau of northwestern New Mexico, by Prof. E. D. Cope, pp. 166-173.

2. Report on the ruins of New Mexico, by Dr. Oscar Loew, pp. 174-178.

3. Report on certain ruins visited in New Mexico, by Lieutenant Rogers Birnie, jr., Thirteenth United States Infantry, pp. 178-180, pl. ix.

 Report on the Pueblo languages of New Mexico and of the Moquis in Arizona; their affinity to each other and to the languages of the other Indian tribes, by Alb. S. Gatchet, philologist, pp. 180–187.

Appendix K. Publications, maps, reports, photographs, pp. 187–188. Index, pp. 189–196.

#### 1876.

√ Annual report upon the geographical surveys west of the one hundredth meridian in California, Nevada, Utah, Colorado, Wyoming, New Mexico, Arizona, and Montana, by George M. Wheeler, First Lieutenant of Engineers, U. S. A.; being Appendix JJ of the Annual Report of the Chief of Engineers for 1876. Washington: Government Printing Office. 1876.

8°. vi, 355 pp., 2 ll., 11 illustrations and maps. [Progress report], pp. 1-79, 3 maps.

- Appendix Λ. Executive and descriptive report of Lieutenant William L. Marshall, Corps of Engineers, on the operations of party No. 1, Colorado section, field season of 1875, pp. 80–109.
- Appendix B. Preliminary report upon the operations of party No. 3, California section, season of 1875–76, with a view to determine the feasibility of diverting the Colorado River for purposes of irrigation, by Lieutenant Eric Bergland, Corps of Engineers, pp. 109–125, 7 maps and illustrations.
- Appendix C. Executive and descriptive report of Lieutenant W. L. Carpenter, Ninth Infantry, on the operations of party No. 3, Colorado section, field season of 1875, pp. 126–130.
- Appendix D. Executive report of Lieutenant R. Birnie, jr., Thirteenth United States Infantry, on the operations of party No. 2, California section, field season of 1875, pp. 130-135.
- Appendix E. Executive and descriptive report of Lieutenant C. C. Morrison, Sixth Cavalry, on the operations of party No. 2, Colorado section, field season of 1875, pp. 136–147.
- Appendix F. Executive report of Lieutenant C. W. Whipple, Ordnance Corps, on the operations of special party, California section, field season of 1875, pp. 147–150.
- Appendix G 1. Meteorology and hypsometry, field season of 1875, by Lieutenant W. L. Marshall, Corps of Engineers, pp. 150–152.
- Appendix G 2. On the meteorlogical conditions of the Mohave Desert, [by Oscar Loew], pp. 152–157.
- Appendix H 1. Report on the geology of southern California, by Prof. Jules Marcou, pp. 158–172.
- Appendix H 2. Report on the geological and mineralogical character of south-eastern California and adjacent regions, pp. 173–188.
- Appendix H 3. Report on the alkaline lakes, thermal springs, mineral springs, and brackish waters of southern California and adjacent country [by Oscar Loew], pp. 188–199.
- Appendix H 4. Report on the geology of the mountain ranges from La Veta Pass to the head of the Pecos, by A. R. Conkling, pp. 199–202.
- Appendix H 5. Report upon the operations of a special natural-history party and main field party No. 1, California section, field season of 1875, being the results of observations upon the economic botany and agriculture of portions of southern California, by Dr. J. T. Rothrock, acting assistant surgeon, United States Army, pp. 202–213.
- Appendix H 6. Report on the physical and agricultural features of southern California, and especially of the Mohave Desert, [by Oscar Loew], pp. 214–222.
- Appendix H. 7. Report on the geographical distribution of vegetation in the Mohave Desert, [by Oscar Leow], pp. 222–224.
- Appendix H 8. Report on the ornithology of the portions of California visited during the field season of 1875, by H. W. Henshaw, pp. 224–278.
- Appendix H 9. Report on the Orthoptera, collected by the United States geographical surveys west of the one-hundredth meridian, under the direction of Lieutenant George M. Wheeler, during the season of 1875, by Samuel H. Scudder, pp. 278–295.
- Appendix H 10. New species of Coleoptera, collected by the expeditions for geographical surveys west of one-hundredth meridian, in charge of Lieut. George M. Wheeler, United States Engineers, by John L. Leconte, M. D., pp. 296-300.
- Appendix H 11. Report on the alpine insect fauna of Colorado and New Mexico, season of 1875, by Lieut. W. L. Carpenter, Ninth Infantry, pp. 301-305.
- Appendix H 12. Notes on the mammals taken and observed in California in 1875, by H. W. Henshaw, pp. 305-312.

Appendix II 13. Report on the operations of a special party for making ethnological researches in the vicinity of Santa Barbara, Cal., with an historical account of the region explored, by Dr. H. C. Yarrow, acting assistant surgeon, United States Army, pp. 312–321.

Appendix H 14. Notes upon ethnology of southern California and adjacent

regions, by Dr. O. Loew, pp. 321-327, 1 illustration.

Appendix H 15. On the physiological effects of a very hot climate, by Dr. O. Loew, pp. 328-330.

Appendix H 16. Analytical report on eleven idioms spoken in southern California, Nevada, and on the lower Colorado River, their phonetic elements, grammatical structure, and mutual affinites, by Alb. S. Gatschet, pp. 330–343. Index, pp. 345–355.

#### 1877.

- Annual report upon the geographical surveys west of the onehundredth meridan in the States and Territories of California, Oregon, Nevada, Texas, Arizona, Colorado, Idaho, Montana, New Mexico, Utah, and Wyoming, by George M. Wheeler, First Lieutenant of Engineers, U. S. A., being Appendix NN of the Annual Report of the Chief of Engineers for 1877. Washington: Government Printing Office. 1877.
  - 8°. iv, 1209-1334, v pp., 3 illustrations.

[Progress Report], pp. 1211-1250, 3 illustrations.

- Appendix A. Executive and descriptive report of Lieutenant Eric Bergland, Corps of Engineers, on the operations of party No. 1, Colorado section, field season of 1876, pp. 1250–1252.
- Appendix B. Executive and descriptive report of Lieutenant Saml. E. Tillman, Corps of Engineers, on the operations of party No. 1, California section, field season of 1876, pp. 1253–1256.
- Appendix C. Executive and descriptive report of Lieutenant Thomas W. Symons, Corps of Engineers, on the operations of party No. 3, California section, field season of 1876, pp. 1257–1262.
- Appendix D. Executive and descriptive report of Lieutenant R. Birnie, jr., Thirteenth Infantry, on the operations of party No. 4, California section, field season of 1876, pp. 1262–1272.
- Appendix E. Executive and descriptive report of Lieutenant Charles C. Morrison, Sixth Cavalry, on the operations of party No. 2, Colorado section, field season of 1876, pp. 1273–1278.
- Appendix F. Executive and descriptive report of Lieutenant M. M. Macomb, Fourth Artillery, on the operations of party No. 2, California section, field season of 1876, pp. 1278–1284.
- Appendix G. Preliminary report on examination at the Comstock lode, by John A. Church, pp. 1284–1285.
- Appendix H. Geological report on the portions of western Nevada and eastern California between the parallels of 39° 30′ and 38° 30′, explored in the field season of 1876, by Mr. A. R. Conkling, pp. 1285–1295.
- Appendix H 1. Report on the lithology of portions of southern Colorado and northern New Mexico, by A. R. Conkling, pp. 1295–1298.
- Appendix II 2. Report on the foothills facing the plains from latitude 35° 30′ to 38° approximately, by Mr. Λ. R. Conkling, pp. 1298–1303.

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8°. x, 234 pp., 8 illustrations and maps.

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8°. vi, 340 pp., 4 maps.

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8°. v, 40 pp., 1 map.

# 1881.

Annual report upon the geographical and topographical surveys of the territory of the United States west of the 100th meridian, in the States and Territories of California, Colorado, Kansas, Nebraska, Nevada, Oregon, Texas, Arizona, Idaho, Montana, New Mexico, Utah, Washington, and Wyoming, in charge of George M. Wheeler, Captain Corps of Engineers, U. S. A. Report of M. M. Macomb, First Lieutenant, Fourth U. S. Artillery, intemporary charge; being Appendix UU of the Annual Report of the Chief of Engineers for 1881. Washington: Government Printing Office. 1881.

8°. iv, 2805–2808 pp., 1 map.

# 1882.

Annual report upon the geographical and topographical surveys of the territory of the United States west of the 100th meridian, in the States and Territories of California, Colorado, Kansas, Nebraska, Nevada, Oregon, Texas, Arizona, Idaho, Montana, New Mexico, Utah, Washington, and Wyoming, in charge of George M. Wheeler, Captain Corps of Engineers, U. S. A. Report of M. M. Macomb, First Lieutenant, Fourth U. S. Artillery, in temporary charge; being Appendix TT of the Annual Report of the Chief of Engineers for 1882. Washington: Government Printing Office. 1882.

8°. 2821–2824 pp., 2 ll.

#### 1883.

Annual report upon the geographical and topographical surveys of the territory of the United States west of the 100th meridian, in the States and Territories of California, Colorado, Kansas, Nebraska, Nevada, Oregon, Texas, Arizona, Idaho, Montana, New Mexico, Utah, Washington, and Wyoming, in charge of George M. Wheeler, Captain Corps of Engineers, U. S. A.; Report of M. M. Macomb, First Lieutenant, Fourth U. S. Artillery, in temporary charge; being Appendix UU of the Annual Report of the Chief of Engineers for 1883. Washington: Government Printing Office. 1883.

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# FINAL REPORTS OR MONOGRAPHS.

[Vignette] [in Vol. I only]. Engineer Department, U. S. [Vols. III and V, United States Army. Report upon United States Geographical Surveys [Vols. III and V, Report upon Geographical and Geological Explorations and Surveys] west of the one hundredth meridian, in charge of Capt. [Vols. II, III, IV-VII, First Lieut.] Geo. M. Wheeler, Corps of Engineers, U. S. Army, under the direction of the Chief of Engineers [Vols. II, III, IV-VII, Brig. Gen. A. A. Humphreys, Chief of Engineers; 'Vol. III, Supplement, Brig. Gen. H. G. Wright, Chief of Engineers U.S. Army. Published by authority of the honorable the Secretary of War [Vol. III, Hon. Wm. W. Belknap, Secretary of Warl, in accordance with acts of Congress of June 23, 1874. and February 15, 1875. In seven volumes and one supplement [Vols. II, III, Supplement IV, VI, VII, in seven volumes; Vols. III and V. in six volumes], accompanied by one topographical and one geological atlas. Volume I [II-III, III Supplement, IV-VII], Geographical Report. [Vol. II, Astronomy and barometric hypsometry; Vols. III and III, Supplement, Geology; Vol. IV, Paleontology; Vol. V, Zoology; Vol. VI, Botany; Vol. VII, Archæology]. Washington: Government Printing Office. 1889 [Vols. II and IV, 1877; Vols. III and V, 1875; Vol. III, Supplement, 1881; Vol. VI, 1878; Vol. VII, 1879.]

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- III. Supplement—Geology. 1881. 420, xxxviii pp., 2 ll., 4 pls., and 3 maps.
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Report upon the collections of fresh-water leeches made in portions of Nevada, Utah, Colorado, New Mexico, and Arizona during the years 1872, 1873, and 1874, by Prof. A. E. Verrill, pp. 955-967.

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Catalogue of plants collected in Nevada, Utah, Colorado, New Mexico, and Arizona, with descriptions of those not contained in Gray's Manual of the Northern U. S., and Vol. V, Geological Exploration of the Fortieth Parallel, by J. T. Rothrock, surgeon and botanist to the expeditions of 1873, 1874, and 1875, and the following botanists: Sereno Watson, Cambridge, Mass.; George Engelmann, M. D., St. Louis, Mo.; Prof. T. C. Porter, Easton, Pa.; M. S. Bebb, Fountaindale, Ill.; Wm. Boott, Boston, Mass.; George Vasey, M. D., Agricultural Department, Washington, D. C.; Prof. D. C. Eaton, Yale College, New Haven, Conn.; Thos. P. James, Cambridge, Mass.; Prof. Edward Tuckerman, Amherst, Mass., pp. 53-351.

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# UNCLASSIFIED PUBLICATIONS.a

[1] Tables of camps, distances, lines of march, etc. Surveys and explorations in Nevada and Arizona, Lieut. Geo. M. Wheeler, U. S.

Army, in charge. Washington, 1871. Oblong folio, 14 pp.

- [2] Tables containing camps, distances, lines of march, latitudes, longitudes, attitudes, etc. Explorations and surveys west of the one hundredth meredian in Utah, Nevada, and Arizona, in charge of 1st Lieut. Geo. M. Wheeler, Corps of Engineers, assisted by 1st Lieuts. R. L. Hoxie and Wm. L. Marshall, Corps of Engineers. Accompanied by a map. Field season of 1872. Washington: Government Printing Office, 1873.
  - 4°. 20 double pages, 1 l., map.
- [3] [Vignette] Report upon the determination of the astronomical coordinates of the primary stations at Cheyenne, Wyoming Territory, and Colorado Springs, Colorado Territory, made during the years 1872 and 1873, geographical and geological explorations and surveys west of the one hundredth meridian. First Lieutenant George M. Wheeler, Corps of Engineers, in charge. Dr. F. Kampf and J. H. Clark, civilian astronomical assistants. Washington: Government Printing Office. 1874.
  - 4°. 82 pp.
- [4] Engineer Department, U. S. Army. Geographical and geological explorations and surveys west of the one hundredth meridian. First Lieut. Geo. M. Wheeler, Corps of Engineers, in charge. Report upon ornithological specimens collected in the years 1871, 1872, and 1873. Washington: Government Printing Office. 1874.
  - 8°. 148 pp.

Report upon and list of birds collected by the expedition for explorations west of the one hundredth meridian in 1872; Lieut. Geo. M. Wheeler, Corps of Engineers, in charge, by Dr. H. C. Yarrow and Henry W. Henshaw, pp. 5-38.

- I. An annotated list of the birds of Utah, by H. W. Henshaw, pp. 39-148.
- [5] Engineer Department, U. S. Army. Geographical and geological explorations and surveys west of the one hundredth meridian. First Lieutenant Geo. M. Wheeler, Corps of Engineers, in charge. Catalogue of plants collected in the years 1871, 1872, and 1873, with descriptions of new species. Washington: Government Printing Office. 1874.
  - 8°. 62 pp.

Botanical report, by Sereno Watson, pp. 5-19.

Preliminary report on the botany of central Colorado, pp. 23-62.

[6] Engineer Department, U. S. Army. Geographical and geological explorations and surveys west of the one hundredth meridian.

First Lieut. Geo. M. Wheeler, Corps of Engineers, in charge. Preliminary report upon invertebrate fossils collected by the expeditions of 1871, 1872, and 1873, with descriptions of new species. C. A. White, M. D. Washington: Government Printing Office. 1874.

8°. 27 pp.

- [7] Geographical and geological explorations and surveys west of the 100th meridian. First Lieut. Geo. M. Wheeler, Corps of Engineers, in charge. Annotated list of birds of Utah, by H. W. Henshaw, ornithologist to the expedition. [From Annals New York Lyceum Natural History, Vol. XI.] Salem: Printed at the Salem Press. 1874.
  - 8°. 14 pp.
- [8] Geographical and geological explorations and surveys west of the 100th meridian. First Lieutenant G. M. Wheeler, Corps of Engineers, U. S. A., in charge. On the Plagopterinæ and the ichthyology of Utah, by Edward D. Cope, A. M. Reprinted from the Proceedings of American Philosophical Society, of Philad'a. Philadelphia: McCalla & Stavely, Prs., 237–9 Dock street. 1874.
  - 8°. 14 pp.
- [9] Engineer Department, U. S. Army. Geographical explorations and surveys west of the 100th meridian. First Lieut. Geo. M. Wheeler, Corps of Engineers, in charge. Systematic catalogue of vertebrata of the Eocene of New Mexico, collected in 1874. E. D. Cope, A. M., paleontologist. Washington: Government Printing Office. April 17, 1875.
  - 8°. 37 pp.
- [10] Engineer Department, U. S. Army. Instructions for taking and recording meteorological observations and for preserving and repairing the instruments; prepared for the use of field and astronomical parties of the expeditions for geographical surveys and explorations west of the one hundredth meridian. Compiled from Colonel Williamson's Use of the Barometer, and from the published instructions of the United States lake survey, with such additions and modifications as have been suggested by the experience of this survey; by First Lieutenants R. L. Hoxie and Wm. L. Marshall, Corps of Engineers, U. S. Army. To which are appended barometrical Tables I to XI, inclusive, of Professional Papers Corps of Engineers, No. 12. Washington: Government Printing Office. 1875.

16°. 64 pp.

[11] Geographical explorations and surveys west of the 100th meridian. Logarithm, Traverse, and Altitude tables. Washington: Government Printing Office. 1875.

<sup>8° 30</sup> pp.

- [12] Engineer Department, U. S. Army. Instructions for taking, recording, and reducing meteorological observations, and for preserving and repairing the instruments. Prepared for the use of United States Geographical Surveys west of the 100th meridian. First Lieut. Geo. M. Wheeler, Corps of Engineers, U. S. Army, in charge. By First Lieutenants R. L. Hoxie and Wm. L. Marshall, Corps of Engineers, U. S. Army. To which are appended barometical Tables I to XI, inclusive, of Professional Papers, Corps of Engineers, No. 12. Washington: Government Printing Office. 1876.
  - 8°. 88 pp.
- [13] Field list of time stars, for the use of the U. S. Geographical Surveys west of the 100th meridian. Washington. 1878.

  8°. 13 pp.
- [14] U. S. Geographical Surveys west of the 100th meridian, Lieut. Geo. M. Wheeler, U. S. Army, in charge. List of longitudes, latitudes, and altitudes, being an extract from Vol. II. Washington. 1878.
  - 4°. 22 pp., with blank tables.
- [15] Engineer Department, United States Army. Catalogue of the mean declination of 2,018 stars between 0<sup>h</sup> to 2<sup>h</sup> and 12<sup>h</sup> to 24<sup>h</sup> right ascension, and 10° and 70° of north declination, for January 1, 1875. Prepared under the direction of First Lieut. Geo. M. Wheeler, Corps of Engineers, U. S. Army, in charge of U. S. Geographical Surveys west of the 100th meridian, by T. H. Safford, Ph. D., Field Memorial Professor of Astronomy in Williams College, Mass. Washington: Government Printing Office. 1879.
  - 4°. 207 pp., 1 l.
- [16] [Vignette.] Engineer Department, U. S. Army. Tables of geographic positions, azimuths, and distances, together with lists of barometric altitudes, magnetic declinations, and itineraries of important routes, prepared principally by First Lieut. M. M. Macomb, 4th U. S. Artillery, assistant, from data gathered by parties of the United States Geographical Surveys west of the 100th meridian, operating in the States and Territories of California, Colorado, Nebraska, Nevada, Oregon, Arizona, Idaho, Montana, New Mexico, and Wyoming, under the direction of Capt. Geo. M. Wheeler, Corps of Engineers, U. S. Army, in charge. 1883. Washington: Government Printing Office. 1885.
  - 4°. 261 pp.

#### MAPS.

The following maps were issued in addition to those accompanying the annual reports and other publications. The greater part of these constitute parts of an atlas which it was intended should embrace all of the United States west of the one hundredth meridian. These sheets include topographic, geologic, and land-classification maps. The others are maps of special areas. All the atlas sheets and special maps issued are listed below.

#### ATLAS SHEETS.

#### TOPOGRAPHIC MAPS.

# Topographic atlas sheets, arranged by States.

#### ARIZONA.

No.	Limit	ing meridians		Limiti paralle		Area.	Scale.	Remarks.
66 67 a		" 0 / 0 to 116 30 0 to 118 45	0	35 40 to 3		Sq. miles. 17,588 17,588	1:506880 1:506880	Hachure map, 4 editions. 2 editions, hachure and shaded.
76 a	108 15	0 to 113 45 0 to 111 0 0 to 111 0	0	34 0 to 3	35 40	17, 952 17, 952 18, 302	1:506880 1:506880 1:506880	Hachuré map. Do. Do.

#### CALIFORNIA.

			_									<del></del>
38 B	119 15	0	to	120	37	30	41 30 t	0 4	12 20	4,075	1:253440	Hachure map.
38 D	119 18	0	to	120	37	30	40 40 t	0 4	11 30	4, 127	1:253440	Do.
47 A b	120 37	30	to	122	0	0	39 50 t	0 4	10 40	4,178	1:253440	Do.
47 B	119 18	0	to	120	37	30	39 50 t	0 4	10 40	4,178	1:253440	Do.
47 D	119 15	0	to	120	37	30	39⋅ 0 t	0 8	39 50	4, 228	1:253440	Do.
47 B and	119 18	5 0	to	120	37	30	38 55 t	0 4	40 40	8,832	1:253440	2 editions; 1 with and 1 with
47 D.b												out hachure.
56 B	119 1	5 0	to	120	37	30	38 10 t	0 8	39 0	4,278	1:253440	Hachure map.
56 D	119 18	5 0	to	120	37	30	37 20 t	0 6	38 10	4,326	1:253440	Do.
57	116 30	0	to	119	15	0	37 20 t	0 8	39 0	17, 209	1:506880	Do.
65	116 30	0	to	119	15	0	35 40 t	0 8	37 20	17,588	1:506880	Do.
65 D b	116 30	0	to	117	52	30	35 40 t	o a	36 30	4,420	1:253440	Do.
66	113 4	5 0	to	116	30	0	35 40 t	to a	37 20	17,588	1:506880	Hachure map; 4 editions.
73	116 30	0	to	119	15	0	34 00 t	to s	35 40	15, 167	1:506880	Hachure map.
73 A b	117 5	2 30	to	119	15	0	34 50 t	to a	35 40	4, 466	1:253440	Do.
73 C b	117 59	2 30	to	119	15	0	34 0 t	to a	84 50	4,510	1:253440	Do.
							J					

 $<sup>\</sup>alpha$  Geologic map also issued for this area.

b Land classification map also issued for this area.

Topographic atlas sheets, arranged by States-Continued.

# COLORADO.

		002		
No.	Limiting meridians.	Limiting parallels.	Area. Scale.	Remarks.
	0 / // 0 / //	0 / 0 /	Sq. miles.	
52 D a	105 30 0 to 106 52 30	39 0 to 39 50	4,228 1:253440	Hachure map.
53 C	104 7 30 to 105 30 0	39 0 to 39 50	4,228 1:253440	Do.
61 A a	106 52 30 to 108 15 0	38 10 to 39 0	4,278 1:253440	2 editions; hachure map and
				contour map.
61 B a	105 30 0 to 106 52 30	38 10 to 39 0	4,278 1:253440	Hachure map, 3 editions.
61 C a	106 52 30 to 108 15 0	37 20 to 38 10	4,326 1:253440	3 editions, first without re-
			´	lief, other 2 hachured.
61 C a	107 15 0 to 107 57 0	37 42 to 38 7	1,100 1:126720	Contour map; 3 editions.
61 D a	105 30 0 to 106 52 30	37 20 to 38 10	4,326 1:253440	Hachure map.
62 A a	104 7 30 to 105 30 0	38 10 to 39 0	4,278 1:253440	Hachure map; 2 editions.
62 C a	104 7 30 to 105 30 0	37 20 to 38 10	4,326 1:253440	Do.
62 D	102 45 0 to 104 7 30	37 20 to 38 10	4,326 1:253440	Hachure map.
69	105 30 0 to 108 15 0	35 40 to 37 20	17,588 1:506880	Do.
69 B b	105 30 0 to 106 52 30	36 30 to 37 20	4,374 1:253440	Do.
70 A b	104 7 30 to 105 30 0	36 30 to 37 20	4,374 1:253440	Do.
	<u> </u>		<u> </u>	
		II	DAHO.	
	·			
32 C a	112 22 30 to 113 45 0	42 20 to 43 10	4,023 1:253440	Hachure map.
32 D a	111 0 0 to 112 22 30	42 20 to 43 10	4,023. 1:253440	Do.
41 A a	112 22 30 to 113 45 0	41 30 to 42 20	4,075 1:253440	Do.
41 B a	111 0 0 to 112 22 30	41 30 to 42 20	4,075 1:253440	Do.
		NE	VADA.	
38 B	119 15 0 to 120 37 30	41 30 to 42 20	4,075 1:253440	Hachure map.
38 Da				_
47 B				
47 D				
47 B and	119 15 0 to 120 37 30		'	The state of the s
47 D.a	110 10 0 00 120 01 00	00 00 10 10 10	0,002 1.20011	out hachures.
48 C	117 52 30 to 119 15 0	39 0 to 39 50	4,228 1:253440	
48 D			1 ' 1	
49	1			
4J	. 110 40 0 10 110 00 0	05 0 10 40 40	10,011	shaded.
56 B	119 15 0 to 120 37 30	38 10 to 39 0	4,278 1:253440	
57		1		
58	1		1 '	
00	110 10 0 0 0 110 00 (		27,200	shaded.
65	116 30 0 to 119 15 (	35 40 to 37 20	17,588 1:506880	
66	1			
00	110 10 0 00 110 00 (	00 10 10 01 20	1 .,,,,,,,,	Zacardio map, 1 carrons.

 $<sup>\</sup>alpha$  Land classification map also issued for this area.

b Land classification and geologic maps also issued for this area.

# Topographic atlas sheets, arranged by States—Continued.

# NEW MEXICO.

No.	Limiting meridians.	Limiting parallels. Area. Scale. Remarks.			Remarks.
	0 / 1/ 0 / 1/	. 0 , 0 ,	Sq. miles.		
69	105 30 0 to 108 15 0	35 40 to 37 20	17,588	1:506880	Hachure map.
69 Bα	105 30 0 to 106 52 30	36 30 to 37 20	4,374	1:253440	Do.
69 Da	105 30 0 to 106 52 30	35 40 to 36 30	4,420	T: 253440	Hachure map; 3 editions.
70 A b	104 7 30 to 105 30 0	36 30 to 37 20	4,374	1:253440	Hachure map.
70 C b	104 7 30 to 105 30 0	35 40 to 36 30	4, 420	1:253440	Do.
76 c	108 15 0 to 111 0 0	34 0 to 35 40	17,952	1:506880	Do.
77 a	105 30 0 to 108 15 0	34 0 to 35 40	17, 952	1:506880	Do.
77 Ba	105 30 0 to 106 52 30	34 50 to 35 40	4,465	1:253440	Do.
77 D α	105 30 0 to 106 52 30	34 0 to 34 50	4,510	1:253440	Do.
78 A a	104 7 30 to 105 30 0	34 50 to 35 40	4,465	1:253440	Do.
83 c	108 15 0 to 111 0 0	32 20 to 34 0	18,302	1:506880	Do.
84a	105 30 0 to 108 15 0	32 20 to 34 0	18,302	1:506880	Do.
84 B a	105 30 0 to 106 52 30	33 10 to 34 0	4,554	1:253440	Hachure map; 2 editions.
-84 Ca	106 52 30 to 108 15 0	32 20 to 33 10	4,597	1:253440	Hachure map.
38 B	119 15 0 to 120 37 30	41 30 to 42 20	4,075	1:253440	Hachure map.
		U'	ГАН.		I
41 Aa	112 22 30 to 113 45 0	41 30 to 42 20	4,075	1:253440	Hachure map.
41 Ba	111 0 0 to 112 22 30	40 30 to 42 20	4,075	1:253440	Do.
49	113 45 0 to 116 30 0	39 0 to 40 40	16, 814	1:506880	2 editions; hachure and shaded.
50b	111 0 0 to 113 45 0	39 0 to 40 40	16,814	1:506880	4 editions; 3 hachure 1 shaded.
58	113 45 0 to 116 30 0	37 20 to 39 0	17, 208	1:506880	Do.
59b	111 0 0 to 113 45 0	37 20 to 39 0	17, 208	1:506880	6 editions; 5 hachure 1 shaded.
66	113 45 0 to 116 30 0	35 40 to 37 20	17, 588	1:506880	Hachure map; 4 editions.
67	111 0 0 to 113 45 0	35 40 to 37 20	17,588	1:506880	Hachure and shaded.
		WYO	OMING.		
32 Da	110 0 0 to 112 22 30	42 20 to 43 10	4,023	1:253440	Hachure map.

a Land classification map also issued for this area.

b Land classification and geologic maps also issued for this area.

c Geologic maps also issued for this area.

#### MAPS.

# GEOLOGIC MAPS.

# Geologic maps, arranged by States.a

# ARIZONA.

No.	Limit	ing	m	erid	ian	s.	Li	mit a.	ing	g pa 8.	ar-	Area.	Scale.	Remarks.
	0 /	,,		0	,	"	0	,		0	,	Sq. miles.		
66	113 45	0	to	114	48	40	35	<b>4</b> 0	to	37	20	6,960	1:506880	On sheet with part of 58.
57	111 0	0	to	113	45	0	35	40	to	37	20	17,588	1:506880	
75	111 0	0	to	113	45	0	34	0	to	35	40	17,952	1:506880	
76	108 15	0	to	111	0	0	34	0	to	35	40	17,952	1:506880	
83	108 15	0	to	111	0	0	32	20	to	34	0	18, 302	1:506880	
										С	OL	ORADO.		
69 B	105 30	0	to	105	50	0	36	35	to	37	20	988	1:253440	On sheet with parts of 69 D
70 A b	104 7	30	to	105	30	0	36	30	to	37	20	4, 374	1:253440	77 B, and 78 A.
* 18	'										NE.	VADA.		'
58	113 45	0	to	114	50	40	37	20	to	39	0	6,860	1:506880	On sheet with portion of 66
66	113 45	0	to	114	48	40	35	40	to	37	20	6, 960	1:506880	On sheet with portion of 58.
										NE	w	MEXICO.		
69 B	105 30	0	to	105	50	0	36	35	to	37	20	988	1:253440	On sheet with parts of 69 D 77 B, and 78 A.
69 D	105 30	0	to	105	58	0	35	40	to	36	30	935	1:253440	Northwest quarter not mapped.
70´ A b	104 7	30	to	105	30	0	36	30	to	37	20	4,374	1:253440	On sheet with parts of 69 B
70 C b	104 7	30	to	105	30	0	35	40	to	36	30	4,420	1:253440	,
76	108 15		to	111	0	0	34	0	to	35	40	17,952	1:506880	
77 B	1,00			100	4 5								1 . 059440	On sheet with parts of 69 E
78 A	105 6	U	to	106	15	0	30	19	to	30	40	1,834	1:253440	and 69 D.
83	108 15	0	to	111	0	0	32	20	to	34	0	18,302	1:506880	
											U	TAH.		
50	111 0	0	to	113	45	0	39	0	to	40	40	16, 814	1:506880	
58	113 45	0	to	114	50	40	37	20	to	39	0	6,860	1:506880	On sheet with portion of 66.
59	111 0			113		0			to			17, 208	1:506880	
00						40	0.5		+-	97	20	6,960	1:506880	1 O1
66	113 45	0	to	114	48	40	35	40	ю	01	40	17,588	1:506880	On sheet with portion of 58

a Topographic maps issued for all these areas. b Land classification map also issued for this area.

# LAND CLASSIFICATION MAPS.

# Land classification maps, arranged by States.

# CALIFORNIA.

-					_		Lin	nit	ing		1.r-		Τ-	()	Domonka
No.	Limi	iting	; m	erid	ian	ıs.		all	lels	3.		Area.	L	Scale.	Remarks.
	0 /	"		0	/	"	0	,		0	,	Sq. miles.			
38 D	119 1	5 0	to	120	37	30	40 4	0	to ·	41	30	4, 127		1:253440	Hachure map.
47	120 3	7 30	to	122	0	0	39 5	0	to	40	40	4,178		1:253440	Do.
47 B and	119 1	5 0	to	120	37	30	35 5	5	to ·	40	40	8,832		1:253440	Do.
47 1).															
65 D	116 3	0 0	to	117	52	30	35 4	0	to	36	30	4, 420	Ì	1:253440	Hachure map; 3 editions.
73 A	117 5	2 30	to	119	15	0	34 5	0	to :	35	40	4, 465		1:253440	Hachure map.
<b>7</b> 3 C	117 5	2 30	to	119	15	0	34	0 .	to :	34	50	4,510		1:253440	Do.
	_				-					C	 OT 4	)		1	
											OL	ORADO.			
52 D	105 3	0 0	to	106	52	30	39	0 -	to :	39	50	4,228	1	1:253440	Hachure map.
61 A	106 5	2 30	to	108	15	0	38 1	0	to :	39	0	4,278		$1:253440^{\circ}$	Contour map.
61 B	105 3	0 0	to	106	52	30	38 1	0	to:	39	0	4,278		1:253440	Hachure map.
61 C	106 5	2 30	to	108	15	0	37 2	0	to	38	10	4,326		1:253440	Do.
61 C	107 1	5 0	to	107	57	0	37 1	2	to :	38	7	1,100		1:126720	Contour map.
61 D	105 3	0 0	to	106	52	30	37 2	0	to :	38	10	4, 326		1:253440	Hachure map.
62 A	104	7 30	to	105	30	0	38 1	0	to :	39	0	4, 278		1:253440	Do.
62 C	104	7 30	to	105	30	0	37 2	0	to :	38	10	4, 326	1	1:253440	Do.
69 B							36 3	0	to	37	20	4,374		1:253440	Do.
70 \( \lambda \)	104	7 30	to	105	30	0	36 3	0	to :	37	20	4,374		1:253440	Hachure map; 2 editions.
												АНО.	1		
32 C							,42 2					4,023		1:253440	Hachure map.
32 D							42 2					4,023		1:253440	Do.
41 A							41 3					4,075		1:253440	Do.
41 B	111	0 0		112	22	30	41 3		10	42	20	4,075		1:253440	Do.
											ŅΕ	VADA.			
38 D	119 1	5 0	to	120	37	30	40 4	0	to ·	41	30	4, 127		1:253440	Hachure map.
47 B and	119 1	5 0	to	120	37	30	38 5	5	to ·	40	40	8,832	-	1:253440	Do.
47 D.														İ	
									1	NE	w	MEXICO.		'	
69 B	105 3	0 0	to	106	52	30	36 3	0	to	37	20	4,374		1:253440	Hachure map.
69 D				106			35 4	0	to	36	30	4, 420		1:253440	Do.
70 A a	104	7 30	to	105	30	0	36 3	0	to .	37	20	4,374		1:253440	Hachure map; 2 editions.
70 C a	104	7 30	to	105	30	0	35 4	0	to	36	30	4, 420		1:253440	Hachure map.
77	105 3	0 0	to	108	15	0	34	0	to	35	40	17,952		1:506880	Do.
77 B	105 3	0 0	to	106	52	30	34 5	0	to	35	40	4,464		1:253440	Do.
77 D	105 3	0 0	to	106	52	30	34	0	to	34	50	4,510		1:253440	Do.
78 A	104	7 30	to	105	30	0	34 5	0	to	35	40	4,465		1:253440	Do.
84	105 3	0 0	to	108	15	0	32 2	0	to	34	0	18, 302		1:506880	Do.
84 B	105 3	0 0	to	106	52	30	33 1	0	to	34	0	4,554		1:253440	Do.
84 C		2 30	to	108	15	0	32 2	0.0	to	33	10	4, 597		1:253440	Do.
-									_	_		1	1_		

a Geologic map also issued for these areas.

# Land classification maps, arranged by States-Continued.

#### UTAH.

No.	Limit	ing	g m	erid	liar	ıs.	Li	mit a	ing	g pa s.	ır-	Area.	Scale.	Remarks.
41 A 41 B		30	to	113	45	0	41	30	to	42	20	Sq. miles. 4, 075 4, 075		Hachure map.

#### WYOMING.

32 D 110 0 0 to 112 22 30 42 20 to 43 10 4,023 1:253440 Hachure map.											
3,42	32 D	110	0	0 to 11	2 22 30	42 20 to	43 10	4,023	1:253440	Hachure map.	

#### SPECIAL MAPS.

Map of the United States west of the Mississippi River, showing drainage areas. Scale, 1:6,000,000.

Yosemite Valley, California. Hachure map. Limiting meridians,  $119^{\circ}$  28' and  $119^{\circ}$  43'; limiting parallels,  $37^{\circ}$  40' and  $37^{\circ}$  48'. Scale, 1:42,240.

Lake Tahoe region, California-Nevada. Hachure map. Limiting meridians,  $119^{\circ}33'$  and  $120^{\circ}22'$ , 30''; limiting parallels,  $38^{\circ}45'$  and  $39^{\circ}32'$ . Scale, 1:84,480.

Lake Tahoe region, California-Nevada. Hachure map. Limiting meridians,  $119^{\circ}$  33' and  $120^{\circ}$  22' 30"; limiting parallels,  $38^{\circ}$  45' and  $39^{\circ}$  32'. Scale, 1:126,720.

Washoe district, Nevada, showing Comstock lode. Limiting meridians, 119° 34′ and 119° 41′ 30″; limiting parallels, 39° 13′ 30″ and 39° 20′ 20″. Scale, 1:24,000.

Washoe district, Nevada. Contour map. Limiting meridians,  $119^{\circ}$  32′ 30″ and  $119^{\circ}$  43′; limiting parallels,  $39^{\circ}$  10′ 10″ and  $39^{\circ}$  21′ 15″. Scale, 1:24,000.

Washoe mining region, Nevada. Contour map, 2 sheets. Limiting meridians,  $119^{\circ}$  32′ 30″ and  $119^{\circ}$  43′; limiting parallels,  $39^{\circ}$  10′ 10″ and  $39^{\circ}$  21′. Scale, 1:18,000.

Reconnaissance map of southeastern Nevada. Scale, 1:760,320.

Map showing extent of Lake Bonneville, Utah-Nevada. Shaded map. Limiting meridians,  $111^{\circ}$  45′ and  $115^{\circ}$  15′; limiting parallels,  $37^{\circ}$  30′ and 42°. Scale, 1:887,040.

Map showing distances, camps, etc., in Utah, field season of 1872. Scale, 1:950,400.

Map of part of southwestern New Mexico. Limiting meridians,  $106^{\circ}$  36' and  $109^{\circ}$ ; limiting parallels,  $32^{\circ}$  20' and  $34^{\circ}$  Scale, 1:633,600.

Bull. 222—04——5

# INDEX.

AL=Lands of the Arid region (see p. 42).
BH=Geology of Black Hills of Dakota (see p. 42).
ECR=Exploration of Colorado River of the West (see p. 41).
Eth, I, etc=Contributions to American Ethnology, vol I, etc. (see p. 43).
HM = Geology of Henry Mountains of Utah (see p. 42).
HP=Geology of High Plateaus of Utah (see p. 42).
H, Ann 1, etc=Annual Reports of Hayden Survey (see pp. 9-20).
H, Bull, vol I, etc=Bulletins of the Hayden Survey (see pp. 21-30).
H, Miscl 1, etc=Miscellaneous publications of the Hayden Survey (see pp. 31-32).
H, Mon I, etc=Monographs or final reports of the Hayden Survey (see pp. 20-21). H, Uncl 1, etc=Unclassified publications of the Hayden Survey, numbered arbitrarily (see pp. 32-34).
K, 1871 etc=Administrative reports of the King Survey for the year mentioned (see pp. 38-39).
K, I, etc=Final Reports of the King Survey (see p. 39).
LOR=Land Office Report for the year mentioned.
PBH=Preliminary Report on the Palcontology of the Black Hills (see p. 42).
UM=Geology of Uinta Mountains (see p. 42).
W, 1869, etc=Annual reports of Wheeler Survey for the year mentioned (see pp. 44-52).
W, I, etc=Volumes of Final Reports of Wheeler Survey (see pp. 52-56).
W, Uncl 1, etc=Unclassified publications of the Wheeler Survey, numbered arbitrarily (see pp. 57-59).
Abajo Mountains, Utah, geology of
pp 189–193, 239; H, Bull, vol 111, No 3, p 558
Abbott (C. C.), articles made of wood, found in graves in southern Cali-
fornia
miscellaneous objects made of stone, from graves of southern Cali-
fornia
mortars and pestles from graves in southern CaliforniaW, vii, pp 70–92
musical instruments made of bones
steatite cooking pots, plates, and food vessels
stone implements of southern California
Abbott (C. C.) and Putnam (F. W.), implements and weapons made of bone
and wood
Abiquiu region, New Mexico, geology of
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## [Bulletin No. 222.]

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March, 1904.

